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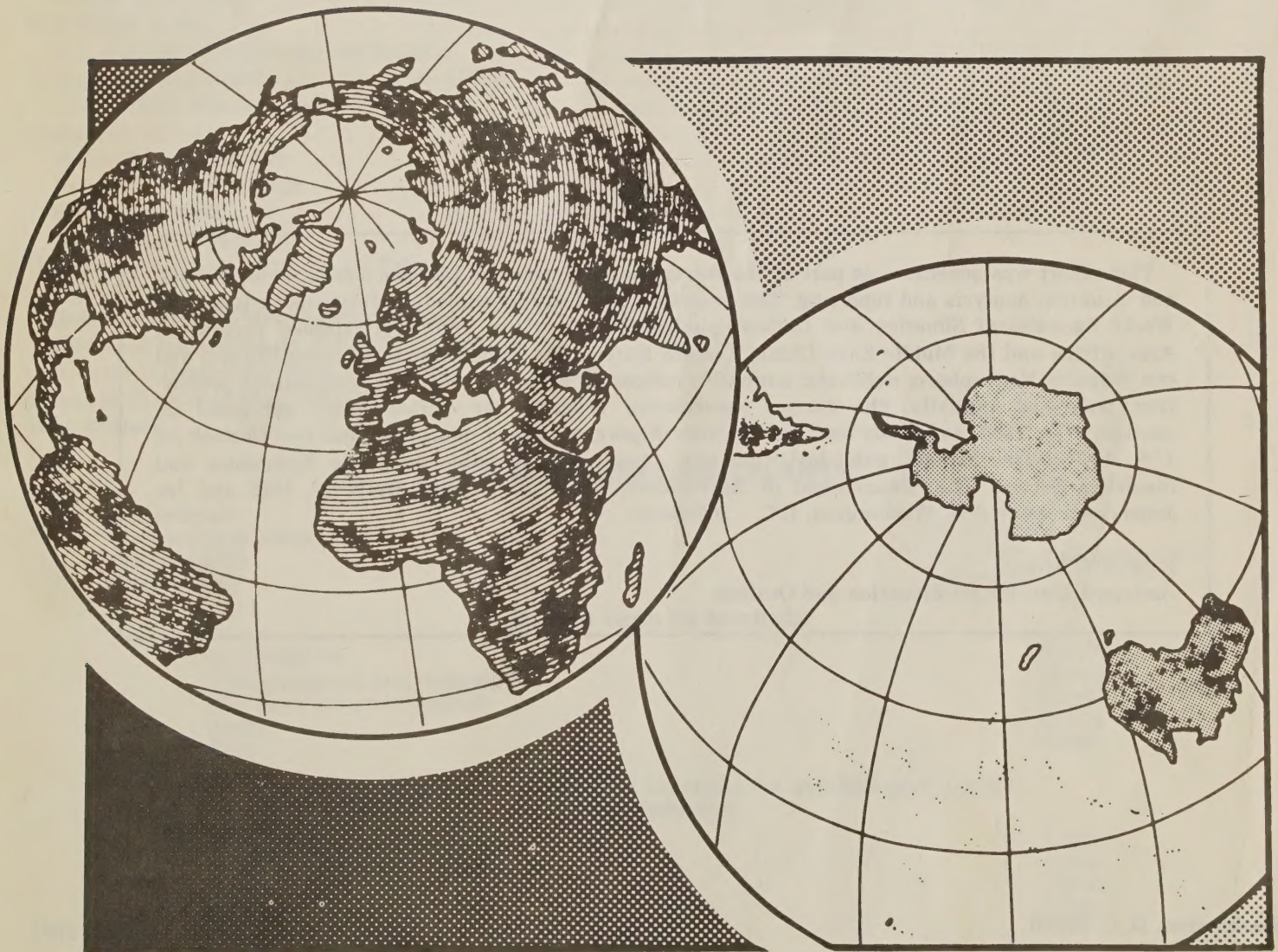
Agricultural Situation: USSR

Review of 1980 and Outlook
for 1981

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USSR Agricultural Situation: Review of 1980 and Outlook for 1981. Eastern Europe and USSR Branch, International Economics Division, Economics and Statistics Service. Supplement 1 to WAS 24—Approved by the World Food and Agricultural Outlook and Situation Board.

ABSTRACT

The value of U.S. agricultural exports to the USSR dropped from \$3.0 billion in 1979 to \$1.2 billion in 1980, as a result of U.S. foreign policy export controls taken in response to the Soviet invasion of Afghanistan. The controls and the appropriate circumstances under which they might be lifted are under review. During 1980, the Soviets suffered a second consecutive poor harvest, with grain production amounting to 189.2 million metric tons. Meat production fell to 15.1 million tons. Soviet agricultural policy is seen shifting toward more efficient feeding, expanded private plot production, and more modest goals in 1981-85. Nevertheless, targets for grain and meat production in 1981 seem overly optimistic.

Keywords: Soviet Union, U.S. sales suspension, agricultural production, crops, livestock, agricultural inputs, 5-Year Plan, agricultural trade.

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Patrick O'Brien
Assistant Director for Situation and Outlook

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CONVERSION EQUIVALENTS

One Kilogram	equals	2.2046 pounds
One centner or metric quintal	"	220.46 pounds
One metric ton	"	10 centners or 2204.6 pounds
One hectare	"	2.471 acres

Metric tons to bushels

	Bushels
One metric ton	36.743
Wheat, potatoes, and soybeans	39.368
Rye, corn, and grain sorghum	45.929
Barley	68.894
Oats	

To convert centners per hectare to bushel per acre, multiply by:

Wheat, potatoes and soybeans	1.487
Rye, corn, and grain sorghum	1.593
Barley	1.8587
Oats	2.788

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FOREWORD

This report reviews and analyzes major developments in Soviet agriculture during 1980 and provides information on the 1981 outlook. Because 1981 marks the beginning of a new Five-Year Plan period in the USSR, we have included an analysis of the agricultural goals for 1981-85, and examined possible new directions in Soviet agricultural policy.

During almost all of 1980, the United States maintained restrictions on the sale of agricultural commodities destined for the Soviet feed-livestock economy. These restrictions were put in place in response to the Soviet invasion of Afghanistan. Consequently, U.S. agricultural exports to the Soviet Union plummeted, and the Soviets made major efforts to counteract the adverse consequences of the suspension. Nevertheless, Soviet data show that animals were under considerable feeding stress during 1980, a result of both the suspension and USSR's domestic crop shortfalls. On January 1, 1981, these export controls were extended. Currently, the circumstances under which the controls might be lifted remain under review.

This report updates and supplements statistics and other information found in *USSR Agricultural Situation: Review of 1979 and Outlook for 1980* (Supplement 1 to *World Agricultural Situation Report* (WAS) Number 21) and *The U.S. Sales Suspension and Soviet Agriculture, an October Assessment* (Supplement 1 to WAS-23).

Angel O. Byrne coordinated and directed this report. Sections were written by Angel O. Byrne, Anton F. Malish, Yuri Markish, and Mary Ponomarenko. Carolyn Miller prepared the statistical data. The U.S. Agricultural Attache in Moscow provided considerable information. The manuscript was prepared for publication by Bernardine Holland and Rose Mayhew of the International Economics Division.

Data used in this report are largely compiled from published official Soviet statistics. For this report, data for past years were checked against most recent Soviet statistics and corrections or revisions made as necessary.

We welcome any comments, suggestions, or questions concerning either this report or the current agricultural situation in the USSR. Responses should be directed to Eastern Europe and USSR Branch, International Economics Division, Economics and Statistics Service, USDA, Room 314, 500-12th Street, S.W., Washington, D.C. 20250. Our telephone number is (202)447-8380.

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April 17, 1981

USSR AGRICULTURAL SITUATION

Review of 1980 and Outlook for 1981

Summary

During 1980, the United States instituted and maintained foreign-policy export controls on agricultural commodities destined for the Soviet feed-livestock economy. As a result of these actions, the value of U.S. agricultural exports to the USSR declined from \$3 billion in 1979 to \$1.2 billion in 1980. It would have fallen about one billion dollars more had not the United States honored its trade obligations with the USSR and permitted the shipment of 8 million tons of wheat and corn authorized in each of the last two agreement years under the U.S.-USSR Grain Agreement. In addition, about \$400 million in U.S. shipments of superphosphoric acid was denied the Soviet Union under the same foreign policy controls. On January 1, 1981, these controls were extended, and currently, the circumstances under which they might be lifted are under review.

The suspension denied the Soviets about 12 million tons of U.S. grain during the 1979/80 July-June marketing year. By searching the world for additional supplies and paying higher prices, they made up about half the total. During 1980/81, the Soviets appear to be making a maximum effort to import grain, and should enter about 35 million tons, including shipments under the last year of the U.S.-USSR Grain Agreement. The prospects of being denied all access to U.S. grains should the suspension continue has prompted the Soviets to send various signals that they are anxious to discuss renewal of the Agreement.

The effects of the sales suspension are overlayed with the second successive poor year for Soviet agriculture. Total agricultural output was valued at 121 billion rubles, 2 percent below last year's level, 6 percent below the 1978 record and 11 percent below the 1980 plan. Not only was the grain crop disappointing, but output of non-grain crops—with the exception of cotton—fell below plan.

Grain production totaled 189.2 million metric tons, up 10 million tons from 1979, but 46 million tons below the plan. The grain area, at 126.6 million hectares, was slightly above that of 1979. Yields, at 1.50 tons per hectare, were about 5 percent above those of the previous year.

The poor outturn resulted from adverse weather, primarily in the European USSR. While winterkill was probably less than normal, the spring crop went in late because of prolonged cool, wet weather. Heavy rains during the growing season, and continued wet weather during harvest reduced what might otherwise have been a good crop. Soviet planners apparently have made no adjustments for 1979 and 1980's weather losses and planned annual average production for 1981-85 is the same figure (238-243 million tons) originally announced at the July 1978 Central Committee Plenum. Forage crops were up in 1980 but apparently were of generally low quality.

Non-grain crops also suffered. Potato production fared poorest of all, and at 67 million tons, was the worst crop since 1962. Poor potato crops in Eastern Europe compromised the most likely Soviet source for additional supplies. Fresh vegetable production, at 25.9 million tons, was 5 percent below 1979 output, and 9 percent below plan.

Sunflowerseed production, at 4.65 million tons, dropped 14 percent below last year's mediocre crop and was 3 million tons short of plan. Soybean production, estimated at 540,000 tons, rose above last year's abysmal crop. Cottonseed from the record cotton crop also increased. Vegetable oil production, at 2.6 million tons, dropped 6 percent from output in 1979. Imports of large quantities of soybeans in 1980 partially offset lower domestic oilseed production.

Sugarbeet production rose 4 percent above last year's sharply reduced crop. Output, at 79.6 million tons, was almost 19 million tons below plan. Total sugar production (including that processed from imported sugarcane) was 10.1 million tons, down 5 percent from 1979.

Cotton was the success story in 1980. Output reached a record 9.96 million tons (seed cotton) or 14.3 million bales (lint basis). Seed cotton output was up 9 percent above 1979's record and the plan target.

Despite the tight feed situation in 1980, cattle, and most probably poultry inventories managed to show small gains. Hog and sheep and goat inventories dropped, however. Cattle numbers, including cows, reached 115.5 million head on January 1, 1981, and poultry numbers probably reached close to a billion. Hog numbers, on the other hand, dropped by 400,000 head to 73.5 million; total sheep and goat numbers fell by over 2 million head.

Meat production in 1980 totaled 15.1 million tons (slaughter weight), down 3 percent from a year earlier and almost 4 percent below the revised-downward plan. Milk production, at 90.7 million tons, fell 3 percent from a year earlier and was short of the revised-downward plan by 4.5 million tons. Egg production continued on the upswing and reached a record 67.7 billion eggs.

Agricultural investments rose 2 percent over 1979 to 36 billion rubles. Agriculture accounted for 27 percent of total capital investments in the national economy, a proportion unchanged for several years. In 1980, 700,000 hectares of newly irrigated land and 650,000 hectares of newly drained land were brought into agricultural production—in both instances, below plan. Tractor deliveries to agriculture continued to lag in 1980, as they did in 1979. Truck and grain combine deliveries rose in number, however. Fertilizer production gained 10 percent to 104 million tons, and fertilizer deliveries to agriculture reached 82 million tons.

The October 1980 Plenum of the Communist Party and events leading up to the 26th Party Congress in February, suggested that significant developments in agrarian

policy are in the offing. One such development was a January decree aimed at expanding output in the private sector. A notable feature was the establishment of a contracting arrangement between the private and public sectors, which would greatly expand the number of animals a private-plot holder can keep. This major departure from orthodox ideology focuses on correcting the deficiencies in meat and milk production.

A second important decision made in 1980 involved the establishment of a "food-program". Its main goal is to expand the integrated agro-industrial complex. Such expansion would better coordinate planning, financing, and management of various branches of the economy related to agricultural production, and the processing and marketing of agricultural commodities. Mikhail Gorbachev, the youngest member of the Politburo, was chosen to lead this new approach in "farm to store" planning.

The new 5-Year Plan (1981-85) for agriculture is less ambitious than the 1976-80 plan. The scaled-down goals

are partly a consequence of the difficulties generated in a centrally-planned economy when certain sectors seek frequent revisions (usually downward) in their output targets. Nevertheless, targets in two key areas, grains and meat, seem overly optimistic. The increase in grain production is to come entirely from higher yields, and it is unlikely that the Soviets can increase fertilizer application and labor productivity sufficiently to achieve a 5-year average of record yields. Secondly, while the problem of protein-deficiency in animal rations is well known, it is not certain that the major effort to expand fodder production and protein-rich crops will be the answer, at least before 1985. Thus, the Soviets are likely to remain major purchasers of grains, oilseeds, and oil-meals during the Eleventh 5-Year Plan. Their efforts at improving feeding efficiency, expanding crop yields, and achieving a better distribution of high quality food products, all would normally be associated with expanded U.S. exports, a possibility now partly closed off by Soviet actions and the sales suspension.

WET, COOL WEATHER REDUCES 1980 GRAIN PRODUCTION

Soviet grain production in 1980 amounted to 189.2 million metric tons, up 10 million tons from 1979, but 46 million tons below plan (table 1).¹ The shortfall was a significant disappointment to Soviet planners who for 1979 and 1980 suffered a cumulative plan shortfall of 94 million tons. The Soviets were left to stress achievement of an annual production of "over 200 million tons" (actually 205 million tons) average for the first time during the Tenth 5-Year Plan. Even this level fell short of the planned annual average of 215-220 million tons. The Soviets noted that only two years of the plan period, 1976 and 1978, were favorable for grain production.

Grain area in 1980 amounted to 126.6 million hectares, slightly above 1979's. Grain yields in 1980 would be about 1.50 metric tons per hectare, up about 5 percent from last year, but only slightly better than the average yields achieved during the Ninth 5-Year Plan (1971-75). To reach 1981 targets, grain yields would have to duplicate the record (1.85 tons per hectare) achieved in 1978.

Winter grains were sown on 36.9 million hectares during the fall of 1979, almost 4 million hectares more than in 1978. Planting took place under generally dry conditions in parts of the Ukraine, Caucasus, and Volga Valley. As a result, some uneven plant development occurred before winter dormancy, but precipitation through December alleviated most dry conditions. Snow cover was generally adequate in areas where frigid temperatures were reported; moderate temperatures prevailed where little or no snow was present. Winter grains emerged from dormancy in generally good condition, and winter-

kill probably amounted to about 11 percent, better than normal in recent years. The Soviet rural-interest newspaper, *Selskaya Zhizn*, reported that over-wintering was satisfactory almost everywhere, and adequate moisture supplies suggested a good grain crop was in prospect.

The warm spring weather, however, was late in arriving. Throughout March and April, the Soviet press carried stories about the unseasonably cold and wet weather that delayed and complicated spring field work and washed nutrients from the soil. By April 28, the Soviets had sown only 9.5 million hectares of spring small grains and pulses, 18.2 million hectares less than the average sown by that date during 1974-79.

The weather complicated planting, forcing some sowing at nighttime, and causing optimum sowing dates to pass before the seed drills could get in the fields. As late as May 29, *Izvestiya* reported:

It was cold last week in the USSR's European territory, particularly in the Central and Volga-Vyatka regions. Forecasters say that this kind of cold spell occurs only once in 30-50 years. In some oblasts there was even a temporary snow cover—also a rare phenomenon for the latter half of May.

Spring weather in the Urals, Kazakhstan, and Western Siberia was more favorable. Here, where drought is the principal concern, higher moisture levels improved the outlook for seed germination and crop development.

Seeding of spring grains and pulses was virtually finished in the USSR by June 9, when spring grains and pulses covered about 97 million hectares.

During the summer, unusual weather patterns continued. Sukhovei-like conditions (hot, dry winds) briefly invaded the southeastern grain areas of the New Lands, and hot dry conditions were prevalent south of an arc across the lower Volga, Northern Kazakhstan and the Southern Urals. Grain crops within this area were under

¹ Soviet data on grain production are in terms of "bunker-weight", i.e., grain as it comes from the combine. It therefore contains varying amounts of moisture and foreign matter.

stress because of inadequate moisture supplies. In the western part of European USSR, heavy rainfall continued, and water standing in the fields damaged grain crops. High winds and rain flattened extensive grain areas, and weeds heavily infested many fields. Uneven and thin winter grain stands, short-strawed fields, instances of leaf rust, and small head size were noted.

Weather also complicated harvesting conditions. Above-normal rainfall in many areas of European USSR persisted into the fall. The Soviets reported that combines had to be equipped with tracks to maneuver in rain-soaked fields and special attachments were fitted to harvest lodged grain. Instances of hand harvesting were also reported. In Kustanay, undersized grain was laid out in double windrows to speed threshing and reduce losses.² By September 1, 1980, only 78.3 million hectares of small grain and pulse crops were cut, the slowest harvest to that date in 10 years. By October 13, the area cut increased to 115.9 million hectares, about the same harvest rate as in previous years, but the season probably ended with some grain still in the fields.

The quality of the 1980 grain crop was probably relatively poor. On the average, a fifth of all grain harvested in the Russian Soviet Federated Socialist Republic (RSFSR) during August lay in windrows more than a week waiting to be picked up and threshed, and the corresponding figure for the Ukraine was about an eighth. In the Non-Chernozem Zone (Non-Black Soil Zone) farmers and townsfolk reportedly turned windrows manually in order to speed up drying.³ Numerous articles and radio broadcasts during September reflected concerns about instances of grain delivered with an excessive moisture content, spoiled grain, or grain sprouting.⁴ Moscow *Pravda* on August 25, 1980 reported that in the Volgograd Oblast, "... even wheat grown in the fields of the agricultural institute training farm is not distinguished by a high gluten content this year."

In the RSFSR, grain production amounted to about 105 million tons, up 14 percent from 1979 (table 2). In the Ukraine, production also increased by 12 percent to 38.3 million tons. In Kazakhstan, production fell 11 percent to 27.5 million tons. In the minor grain growing republics, grain production was about 19 million tons, about the same as last year. Grain procurements in 1979 were about 63 million tons (table 3), but during 1980, procurement data, which is normally used as an indication of crop outturn, was too spotty to be of much forecast value. Long after the harvest was completed procurements were reported to have amounted to 70 million tons.

Wheat production in 1980 rose to 98.1 million tons from 90.1 million tons in 1979. Output is thought to be about equally divided between winter and spring wheat. Rye production, at 10.2 million tons, was about 25 percent above last year, probably as a result of expanded area. Corn production, at 9.7 million tons, was about 15 percent above last year. Barley output is estimated at 44 million tons; below-normal winterkill of winter wheat meant that barley area was probably some 14 or 15 percent below 1979. Total coarse grain production, estimated at 80.6 million, was about the same as last year, on perhaps 8 percent smaller area.

As of February, USDA estimated Soviet grain utilization for the July-June 1980/81 marketing year at 225 million tons (tables 4 and 5), slightly below the peak that coincided with their record production year, 1978. Seed, industrial, and food use was estimated at 79 million tons. Feed use is expected to amount to 118 million tons, about 6 percent lower than in 1979/80.

Although the level of grain stocks in the USSR are not known in the West, such stocks were probably at minimum, or near minimum, levels and could not be used to sustain feeding rates as they did in 1979/80.

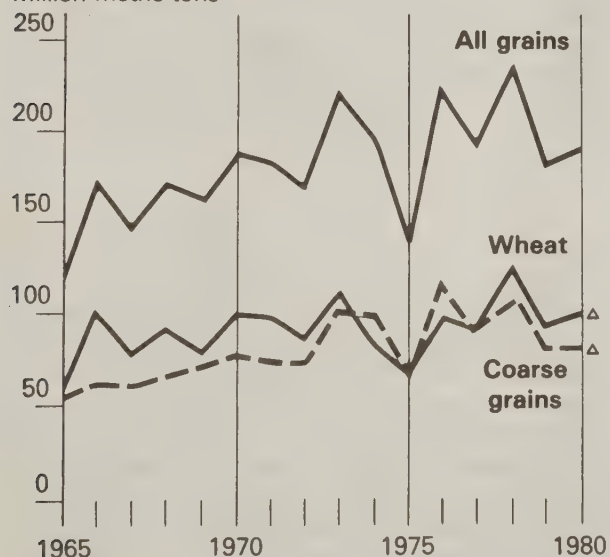
Net imports will probably reach a record 34 million tons as Soviet feed requirements forced them actively into the world market. Very quickly into the last year of the U.S.-USSR Grain Agreement (October 1, 1980-September 30, 1981), the Soviets contracted for the full 8-million-ton-limit allowed without government-to-government consultations and as of the end of February, 6.7 million tons had already been shipped. Unless the suspension is lifted, the Soviets can count on no further grain from the United States.

Dockage-waste, a calculation made necessary by the Soviet use of the "bunker-weight" grain reporting concept, probably amounted to about 28 million tons in 1980. Dockage-waste is an indication of the amount of excess moisture and foreign matter gathered during harvest. Although the collection of weeds and trash is especially a factor in years such as 1980, the dockage-waste estimate is largely dependent upon the amount of rainfall during harvesting. Last year, with heavy rains fre-

Figure 1

USSR Grain Production

Million metric tons



▲ Estimate.

² Moscow, *Pravda*, September 18, 1980, p. 1.

³ Moscow domestic service, September 10, as reported in FBIS, September 11, 1980.

⁴ See, for example, Moscow *Pravda*, September 11, 1980 and Moscow *Izvestiya*, September 9, 1980.

quently interfering with harvesting, perhaps 15 percent of the production volume represents dockage and waste.

The late harvest greatly complicated sowing the 1981 winter crop. Winter grains were probably sown on only about 34 million hectares of the 37 million planned. Seed drills and combines were often reported working the same fields, and "whole series of kolkhozes and sovkhozes . . . have missed or are missing the optimum sowing period."⁵ A reduced area, poorer field prepara-

tion, possibly reduced seed quality and uneven crop development may all mean reduced outturn. On the other hand, a generally favorable and wet winter may be an offsetting factor.

Total grain area in 1981 is planned at 127-128 million hectares, and some perhaps all of the fall-planting shortfall can be made up in the spring. As noted earlier, record yields would be required to reach the 1981 target of 236 million tons. (Anton F. Malish)

SOVIETS MOVE TO RESTRUCTURE ANIMAL RATIONS

During 1980, the Soviet Union devoted an unusual amount of attention to expanding fodder production, improving its transportation and storage, and increasing its use. In March 1980, for example, the Soviet Government and the Communist Party adopted a resolution which declared:

In order to fully provide public sector stock-raising and livestock privately owned by the population with rich coarse and succulent feed and to economize on grain consumption for forage purposes, the Central Committee of the Communist Party and the USSR Council of Ministers regard it as one of the main tasks . . . to seek a considerable increase in 1980 in the production of hay, silage, cured hay, feed root crops and other feeds and an improvement in their quality.

Specific plans included in the resolution were to increase irrigation of forage crops, boost the production of manual hay-harvesting machinery, expand construction of forage storage facilities, encourage production by extra bonuses and incentives, and allow rail transportation of baled roughages between October 1980 and May 1981 with no penalty for underloading freight cars (by weight).

Such measures may have been taken in any case following the poor grain and forage harvests of 1979, but the U.S. sales suspension undoubtedly focused Soviet attention on their overfeeding of grain, and their increasing reliance on imports to maintain feeding rates.

Soviet forage output increased in 1980, according to the last harvest reports (early October) available. Hay production reached 54.3 million tons, over 1.5 million tons more than produced on this same date in 1978 and 1979. Haylage production, at 67.7 million tons, was about 13.3 million tons more than produced on October 6, 1979, but about 5 percent less than produced by the same date in 1978. The 78.5 million tons of straw collected was 15 percent more than a year earlier but 9 percent short of the amount gathered by October 6, 1978. Silage production reached 170.5 million tons, about 4 percent ahead of output by October 6 in both 1978 and 1979. An upward trend in grass meal production also continued in 1980. The 6.75 million tons produced by October 6, 1980, was over 10 percent more than by this date in 1978 and 1979.

USSR output of selected feed by type in the USSR during 1975-80 is shown below.

The increase in forage output appears to have been at least partially offset by a drop in quality. A December 16, 1980 article in *Selskaya Zhizn* by the Director of the All-Union Livestock Institute noted that the summer and fall rains caused spoilage of straw not stored under cover. In the Non-Black Soil Zone, feed samples showed less-than-normal amounts of iron and cobalt in hay, a lack of zinc, iron and copper in haylage, and a lack of cobalt in silage. Similarly, an article in *Sovetskaya Rossiya* (October 2, 1980) pointed out:

. . . there are regions where a considerable portion of the fodder is not noted for its high quality. On many farms in the Northwest, Central, Central Chernozem and certain other regions, more than half the hay and cured hay that has been procured is third-class and even substandard, and the quality of the silage and grass meal is no better.

The Soviets have taken several measures aimed at correcting a protein imbalance which they have recognized in their feed rations for some years. Mixed feed production in 1980 increased to 65 million tons, up 8 percent, or 5 million tons above 1979.⁶ Though falling short of plan (77 million tons in 1980) mixed feed production in the USSR more than doubled since 1970. The Soviets, for the first time, purchased 500,000 metric tons of mixed feeds from the EC (European Community).⁷ More significantly, the Soviets became major importers of soybean meal. While they had previously imported soybeans as a crush capacity fill, in 1980 they were apparently attempting to upgrade their rations as quickly as possible.

⁶ According to G.K. Penkov, "The Task of the Oils and Fats Industry in Solving the Problem of Feed Protein," *Maslo-Zhirovaya Promyshlennost*, February 1980, mixed feeds are the main sources of concentrated proteins and vitamins, and the main protein component of mixed feeds is oilseed meals and cakes. Oilseed meals and cakes are apparently superior to fodder yeast and fish and bone meal, and more cheaply utilized.

⁷ The Soviets also purchased 400,000 to 500,000 tons of manioc from Thailand. This grain substitute would be used in their mixed-feed industry.

⁵ *Sovetskaya Rossiya*, October 3, 1980.

**Selected feed output from all sources, by type,
1975-80 and the 1985 plan**

Year	Hay	Haylage	Straw	Silage	Feed roots
<i>Million metric tons</i>					
1975	46.5	47.0	79.8	144.3	33.2
1976	49.7	62.1	97.2	211.7	49.9
1977	¹ 45.0	65.8	¹ 76.3	197.8	45.3
1978	²	52.8	71.0	86.4	163.6
1979	²	52.6	54.4	68.3	163.2
1980	²	54.3	67.7	78.5	170.5
1985 plan	80	77	NA	274	NA

NA = not available. ¹As of September 26. No later data or final output available. ²As of October 6.

The Soviets appear to have maintained grain-for-feed levels during 1979/80 at about 126 million tons by relying on a major drawdown in stocks. During 1980/81, such stocks were not available, and grain-for-feed use is estimated to fall to about 118 million tons. With grain for feed especially tight, a reflection of two poor harvests and the U.S. sales suspension, the Soviets, nevertheless, seem to have stretched their feed availabilities by expanding the use of protein supplements, relying more on feed shops to upgrade rations, and more carefully monitoring feed supplies.

There is every reason to believe that these efforts to restructure Soviet feed rations will be maintained. An article by V. Tikhonov, an agricultural scientist, recently addressed these points in the context of the U.S. sales suspension:

The embargo . . . despite its failure, nonetheless forces us to think once again about the expediency of large-scale wheat purchases. . . . our widely practical use of wheat for fodder purposes is economically inexpedient—its protein content is less than that of pulse crops and it is not assimilated as well by the animals.

That is why it is essential to change the structure of grain production, increasing the proportions of forage pulse crops and corn. . . . this would substantially help us to return to the role of wheat exporters . . . and it would thus be possible to increase the importation of the high-protein fodder which we are not yet able to supply ourselves with.

. . . I think there is a possibility of setting up exchange on mutually advantageous barter terms with other socialist countries which have . . . conditions for expanding the production of soybeans and processed soybean products.⁸

Finally, the 1981-85 plan calls for a special effort to improve mixed feed supplies. Annual production of leguminous crops is planned to reach 12-13 million tons as compared to an average pulse crop of 6.9 million tons during 1976-80. The area sown to protein rich crops is to expand significantly. A balanced feed-production program is to be implemented, and feed production is to be a specialized branch on each farm. Storage facilities for grain and forage are to be expanded, and mixed feed production is to increase by 13 to 15 percent. (Anton F. Malish)

LIVESTOCK SECTOR PERFORMANCE DISAPPOINTING

Livestock Inventories

The USSR entered 1981 with record inventories of cattle, and most probably poultry (table 6). Hog inventories, on the other hand, dropped by 400,000 head, with the decline occurring in the private sector. Sheep and goat inventories fell 2 percent. Given the tight feed situation in 1980, a large drawdown in hog inventories in the fourth quarter was expected. Although the private sector was more adversely affected than state and collective farms, overall, hog numbers fell by only half a percent. Feeding wet grain from the 1980 harvest and large grain imports in the fourth quarter undoubtedly helped offset the need to heavily drawdown the hog population.

Total cattle inventories, including cows, on January 1, 1981, at 115.5 million head and 43.4 million head, respectively, increased slightly—by .4 percent and .2 percent. In both instances, the largest gains occurred in the socialized sector, with the private sector recording a 4 percent drop in cattle and no change in cows. Total hog inventories amounted to 73.5 million head. Total sheep and goat inventories, at 147 million head, were down by 2.4 million head with the largest percentage decrease occurring in the socialized sector. Poultry inventories as of January 1, 1981, were not included in the 1980 plan fulfillment report, but it is estimated that they reached

close to a billion. There are indications that the poultry sector received preferential feed supplies in 1980.

Despite the tight feed situation in 1980 resulting from the poor grain and forage crops a year earlier and the U.S. sales suspension, changes in monthly livestock inventories on state and collective farms showed no drastic diversion from normal inventory patterns (table 7). Somewhat heavier-than-normal drawdown of hogs occurred in the first two months of 1980, but hog monthly inventory patterns returned to normal levels in March-August. Beginning in September-November, however, fewer numbers of hogs were slaughtered compared to previous patterns. The Soviets made a strong effort to maintain the hog population, and hog numbers in the socialized sector on December 1, 1980, reached a record. Nevertheless, this effort was not enough to offset the decline in private-sector hog numbers.

During 1980, the RSFSR, the Ukraine, and Kazakhstan continued to account for the bulk of Soviet livestock (table 8).

Meat

Meat production (slaughter weight) in 1980 totaled 15.1 million tons, down 3 percent from a year earlier and

⁸ *Pravda*, December 16, 1980.

almost 4 percent below the revised 1980 plan of 15.7 million tons (table 9).⁹ Soviet meat output has not increased since the 1978 record. Of total meat output, beef and pork probably fell, mutton and lamb probably dropped slightly, and poultry meat undoubtedly increased.

The average output plan for meat during 1976-80, was revised downward but still not met. Annual average output reached 14.9 million tons during the plan period, down 1 percent from plan.

Government purchases of meat totaled 15.9 million tons (live weight, 9.9 million tons slaughter weight), down 5 percent from a year earlier (table 10). The average weight of cattle and hogs sold to the Government for slaughter during January-November 1980, at 354 kilograms and 101 kilograms, respectively, were both down 3 percent and 2 percent from average weights sold in the corresponding periods of 1978 and 1979. Marketing of cattle and hogs in this same period were also down in 1980. Compared with the numbers marketed in January-November 1978 and 1979, cattle were down by 4 percent and 3 percent, respectively, while hogs were down 4 percent and 2 percent.

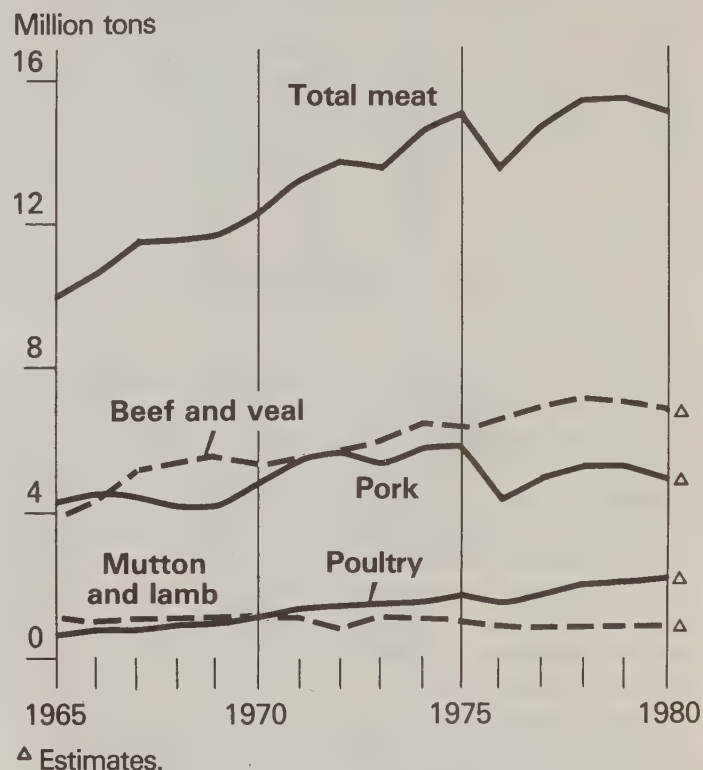
With the shortfall in 1980 meat production and despite estimated record meat imports, per capita consumption of meat (including fat) probably fell last year by at least 2 kilograms below the 58 kilogram level of 1979 (table 11).

In 1979, Soviet imports of meat and meat products rose to a near-record 611,000 tons, despite 15.5 million tons of domestic meat output and continuing high meat prices in world markets (table 12). The decision to import at this high level—a three-fold increase over the drastically reduced 1978 volume—was undoubtedly related to a much improved foreign-exchange position caused by higher prices for Soviet exports of oil, oil products, natural gas, and gold. Furthermore, planning for the 1980 Summer Olympics and the anticipated need to increase meat and meat product availabilities may have been a factor in raising imports in 1979.

Fresh, frozen meat imports in 1979 reached a near-record 527,000 tons. Of this, fresh, frozen red meat, at

Figure 2

Meat Production



386,200 tons, made the sharpest gain, rising more than four-fold above the reduced 84,000 tons in 1978. Fresh, frozen poultry meat, at 141,000 tons, also rose above the reduced 52,000 tons in 1978. Romania, New Zealand, the Mongolian Peoples' Republic, and Argentina were the major suppliers of fresh, frozen red meat. Hungary, traditionally the largest supplier of fresh, frozen poultry meat, doubled its exports in 1979.

Imports of canned meat more than doubled in volume, and imports of canned meat with vegetables rose 4 percent.

Soviet exports of meat and meat products in 1979 dropped 14 percent below a year earlier to 33,500 tons. Frozen meat exports, at 6,000 tons, were the lowest in the past 10 years. Canned meat exports dropped 3 percent, with Cuba again the major recipient.

USSR meat and meat product imports in 1980 reached a record 820,000 tons, up 34 percent from a year earlier. Major beef and mutton suppliers most likely were East Europe, Argentina, the EC, New Zealand and Australia. Major suppliers of poultry meat most probably were the EC and East European countries. In recent years, the United States has been a source for USSR imports of poultry meat. Purchases of U.S. poultry meat for delivery were made last year, but the exports were halted by the sales suspension. Furthermore, a rumored pork purchase of several thousand tons also failed to materialize after the sales suspension became effective.

Milk and Dairy Products

Milk output, totaling 90.7 million tons, dropped 3 percent below output in 1979 and also fell short of the

USSR socialized sector average weights of cattle and hogs and number marketed, cumulative January-November, 1978-80

Category and Year	Meat production	Average weights	Number of head marketed
	1,000 tons	Kilograms	1,000 head
Cattle			
1978	8,878	366	24,256
1979	8,653	362	23,903
1980	8,248	354	23,299
Hogs			
1978	3,612	104	34,750
1979	3,532	103	34,291
1980	3,381	101	33,475

⁹ The original 1980 plan called for 17.3 million tons of meat (slaughter weight).

revised-downward 1980 plan ¹⁰ by 4.5 million tons—despite record numbers of cows. Because of poorer roughage availability, milk yields per cow showed a continuous decline through all of 1980; milk yields have dropped in the past 4 years. The 1976-80 average plan for milk output was revised down from 96.2 million tons to 93.6 million. Even with this downward revision, actual average output during those 5 years fell short of the goal by 1.3 million tons. Government purchases of milk, at 57.3 million tons, were 3 percent below 1979 and 10 percent below plan. Actual average purchases during the 5 years fell short of plan by 1.8 million tons.

Food industry output of whole-milk products reached 25.3 million tons, up by almost 2 percent from output in 1979 but less than 1 percent above plan. Food industry butter output, at 1.3 million tons, was reportedly down 4 percent from the reduced 1979 level, resulting in a continued tight butter situation. In 1979, with an 8-percent decrease in output, butter imports reached a near-record 174,000 tons versus 39,000 tons in 1978. Imports in 1980 reached a record 249,000 tons, up 43 percent from 1979.

Per capita consumption of milk and milk products (including milk equivalent of butter) in 1979 reached 319 kilograms or 1 kilogram above a year earlier. With further reduction in milk output in 1980, consumption probably dropped again by at least 2 kilograms—thus falling far short of the 1980 plan that called for 335 kilograms per person.

Eggs

Egg production was the one success story in the 1980 livestock sector. Output reached a record 67.7 billion eggs, up 3 percent from a year earlier and slightly above the revised-upward plan for 1980. ¹¹ The 5-year plan for average output of eggs, which was revised upward from 60.8 billion to 61.3 billion eggs, was reached and exceeded by 3 percent. Government purchases of eggs, at 43.1 billion, were up almost 5 percent from a year earlier. The good showing in egg production was influenced by a decision to give the poultry sector preferential supplies of feed.

In 1979, the USSR imported 767 million eggs, up 13 percent from the reduced 1978 level. Traditional suppliers were Poland, Finland, Hungary, and Bulgaria. Imports from Bulgaria rose sharply by almost two-thirds over 1978's reduced imports. Imports from Poland, which increased a sharp 72 percent in 1978, rose again by 8 percent in 1979. Imports from Finland rose 18 percent over the large drop in 1978, but imports from Hungary fell.

Egg consumption in 1979 reached a record 233 eggs per person. It is estimated that 1980 per capita consumption

rose by at least 3-4 eggs. Despite the fast upward trend in egg consumption, per capita levels still remain below the scientific norm established by the Soviets (table 11).

Wool

Wool production in the USSR in 1980 totaled 462,000 tons (greasy basis), down 2 percent from the 1979 record and 3 percent below the revised-downward plan for 1980. ¹² The average output plan for 1976-80, revised down to 464,000 tons from 472,000 tons, was missed by 1 percent.

Wool (scoured) imports in 1979 totaled 134,500 tons, up 6 percent from a year earlier. Major suppliers were Australia, New Zealand, Argentina, and the Mongolian Peoples' Republic. Of total imports, Australia accounted for the bulk or almost half. Imports from New Zealand rose 42 percent but imports from Argentina dropped by 23 percent. Lesser suppliers included Uruguay, Syria, and Afghanistan, which supplied a total of a little over 11,000 tons.

Wool exports in 1979, at 1,342 tons, were down by 23 percent from a year earlier. About half of total exports went to Czechoslovakia and Great Britain.

Livestock Decree

In December 1980, the Soviet Government and Party adopted a resolution establishing an all-union socialist competition for livestock workers. The main objective of the resolution was to establish an incentive program geared toward successful over-wintering of livestock, increases in farm output and sales of livestock products during the winter of 1980/81, fulfillment and overfulfillment of production and procurement plans, effective use of feed, and increases in livestock numbers and productivity as compared with results in the corresponding periods in 1980.

The established competition was to cover performance in the fourth-quarter period of 1980 and the first six-month period of 1981, with the results to be summed up on July 1, 1981. Top prizes for top performances will range from 5,000 rubles for collective and State farms to 100,000 rubles for the union republics. Winning farms will also receive buses and passenger cars as prizes.

A similar incentive program was established in December 1979. As noted, livestock inventories were generally maintained in most cases, but productivity of livestock was lowered because of the tight feed situation, probably worsened by the U.S. sales suspension. The continuation of the socialist competition into 1981, however, confirms that the Soviet leadership continues to recognize and emphasize the need to boost the supply of livestock products and to use available feed supplies as effectively as possible. (Angel O. Byrne)

¹⁰ The original 1980 plan called for milk production to reach 102 million tons but was revised down to 95 million tons.

¹¹ The original 1980 plan called for 66.8 billion eggs. In late 1979, this was revised upward to 67.6 billion.

¹² The original 1980 plan, calling for 515,000 tons of wool (greasy basis), was revised down to 476,000 tons.

COTTON REACHES NEW RECORD

Cotton Production

Cotton in 1980 continued to be the success story in USSR crop production. Output reached a new record 9.96 million tons, seed cotton, or 14.3 million bales, lint basis (table 13). Output (seed cotton) was 800,000 tons above the 1979 record and 840,000 tons above plan. Cotton area totaled a record 3,147,000 hectares,¹³ up 2 percent from a year earlier.

Weather conditions in the principal cotton-growing republics in Soviet Central Asia and also in Azerbaidzhan (located in the Transcaucasus and the only cotton-growing Republic outside Soviet Central Asia) were ideal. Seeding began ahead of schedule, cotton ripened 2-3 weeks earlier than usual, and harvest operations began much earlier than in the past several years.

Output in all the Central Asian republics and Azerbaidzhan reached record or near-record levels in 1980, continuing the upward trend in cotton production for the past several years. Since 1975, output in Uzbekistan (the largest cotton producer in the USSR) has increased by almost 24 percent, in Tadzhikistan and Kazakhstan by about 20 percent in each case, and in Turkmenistan by 16 percent. Output in Azerbaidzhan has almost doubled in volume and has grown by about 6 percent in Kirgizia.

Based on an estimated 31.2 percent ginning rate, cotton lint outturn from the 1980 crop will reach a record 3.1 million tons, up almost 9 percent from outturn from the 1979 crop. With this record output, USSR exports of cotton lint in 1980/81 (year beginning August) have the potential to reach a record of about 950,000 tons (table 14).

In calendar 1979, USSR exports of cotton lint reached 789,000 tons, down 8 percent from 1978. East European countries, traditionally the largest recipients of USSR cotton lint, accounted for 432,200 tons or more than half of USSR total exports. Japan was the largest single buyer in 1979, although its cotton imports from the

USSR dropped 4 percent. France, which was the largest Western market for USSR cotton lint in 1978, dropped its 1979 imports by 22 percent. With two years of record cotton crops, it remains to be seen whether the USSR adopts a more aggressive posture as a cotton exporter.¹⁴

USSR imports of cotton lint in calendar 1979 rose 31 percent to 85,600 tons—following a dip in 1978. Major suppliers in 1979 were Iran, Afghanistan, and Syria. Imports from Afghanistan and Iran rose by 32 percent and 21 percent, respectively; imports from Syria rose 5 percent. Egypt, formerly the major supplier of cotton lint to the USSR, again was not listed as a supplier in the 1979 Soviet statistical trade handbook.

Textile Production

In the last 10 years or so, the USSR textile industry has shown a very gradual growth in the production of most natural fiber yarns and cloth. Since 1971, total yarn and cloth output in the USSR increased about 9 percent and 16 percent, respectively. In the past 3 years, however, output of cloth has stabilized at about 10.7 billion square meters—with a 14 percent below-plan output in 1980 (table 15).

From 1971-79, cotton yarn and cotton cloth output increased by 8 percent and 9 percent, respectively. Linen yarn and cloth, which had gained 2 percent and 9 percent from 1971-78, dropped by almost 9 percent and 7 percent, respectively, in 1979 from a year earlier to below the 1971-75 average output. Wool cloth made the largest percentage gain, up by about 15 percent from 1971-78. In 1979, output dropped slightly from a year earlier. Similarly, wool yarn output increased by 21 percent.

USSR trade in cotton yarn and cotton, linen and wool cloth has been relatively small; annual USSR statistical trade handbooks do not list either wool yarn exports nor any trade in linen yarn. During 1976-79, average exports of cotton yarn and cotton cloth totaled 1,000 tons and 211 million meters, respectively (table 16). Recipients of Soviet cotton cloth in the past few years have been the Mongolian Peoples' Republic, Cuba, Belgium, Canada, and Singapore. Linen cloth and wool cloth average exports during 1976-79 reached 5.6 million meters and 1.4 million meters, respectively.

USSR annual imports of cotton cloth during 1971-79 were erratic, ranging from a low of a million meters in 1974 to a record 190 million meters in 1977. India, Hungary, and Pakistan have been the major suppliers in recent years. Cotton yarn imports reached a record

Output of cotton by republic, USSR, 1975-1980

Republic	1975	1976	1977	1978	1979	1980 ¹
1,000 tons						
Uzbekistan	5014	5335	5676	5500	5763	6237
Turkmenistan	1078	1046	1170	1027	1215	1258
Tadzhikistan	836	847	861	909	903	1011
Azerbaidzhan	451	532	512	598	742	884
Kazakhstan	283	310	324	261	330	357
Kirgizia	202	208	215	205	208	214

¹Preliminary.

¹³ A new cotton area of 80,000 hectares, located in southern Kazakhstan in the Kyzyl-Kum Desert, is reportedly being brought into production in 1981. (Moscow Radio, February 14, 1981).

¹⁴ In the third week of January 1981, prices for Soviet cotton in Osaka, Japan were higher (95.5 cents per lb. CIF) than those for the United States or Mexico (95 cents and 93.5 cents per lb., respectively).

Output of natural fiber yarn and cloth, 1971-1980

Year	Total ¹	Yarn			Total ²	Cloth		
		Cotton	Linen	Wool		Cotton	Linen	Wool
		— Million tons —				Bil. sq. mtrs.		Mil. sq. mtrs.
1971	2.13	1.49	.264	.371	9.2	6.4	760	675
1972	2.15	1.50	.264	.377	9.4	6.4	775	681
1973	2.19	1.54	.267	.393	9.7	6.6	796	703
1974	2.23	1.56	.267	.408	9.8	6.6	796	724
1975	2.25	1.57	.260	.417	10.0	6.6	779	740
1976	2.28	1.58	.268	.429	10.3	6.8	807	764
1977	2.31	1.60	.269	.437	10.4	6.8	817	773
1978	2.35	1.63	.268	.447	10.7	7.0	830	781
1979	2.32	1.62	.245	.450	10.7	7.0	768	774
1980	NA	NA	NA	NA	10.7	NA	NA	NA

¹Does not include silk yarn and others. ²Includes silk and other natural fiber cloth.

Note: Totals may not add due to rounding.

35,000 tons in 1977, but dropped in 1979 to the lowest level since 1974. Egypt supplied the bulk of these imports in 1978 and 1979.

Wool yarn and wool cloth imports during 1976-79 averaged 9,000 tons and close to 14 million meters, respectively, up by small margins from average imports during

1971-75. Belgium and Italy were the principal suppliers of wool yarn in 1978 and 1979, while Poland, Finland, and Czechoslovakia were the major suppliers of wool cloth. Linen cloth average imports during 1976-79 reached 10 million meters, up 43 percent from 1971-75 average imports. (Angel O. Byrne)

CHRONIC OILSEED PROBLEMS PERSIST

Sunflower, Cottonseed and Soybean Production

In all likelihood, total USSR oilseed production probably changed little from last year's disappointing output. Increases in other oilseed production probably did not offset the larger decline in sunflowerseeds, as shown below.

Sunflowerseed output totaled 4.65 million tons in 1980, more than 3 million tons below plan and 14 percent below last year's production. Average output during 1976-80 reached 5.32 million tons, 2.3 million tons below the 5-year planned average and also well below 1966-70 and 1971-75 average production.

The 10-year slide in average sunflowerseed production signals serious, persistent problems. The continued widespread use of open-pollinated sunflower varieties, lack of sufficient hybrid seed, and generally inadequate levels of chemical inputs have severely limited Soviet sunflowerseed production. Furthermore, sunflowers continue to suffer from chronic diseases, such as grey rot, white rot, broom rape, and false mealy dew. More resistant hybrid varieties and larger, more effective application of chemicals would alleviate some of these problems and result in improved yields.

However, weather has been the major determining factor, either aggravating or alleviating influences of other inherent problems. The 1980 crop had an extremely poor season. Prolonged cool, wet conditions delayed sowing by approximately 3 weeks, caused serious lags in seed maturation, and, consequently, yields were reduced.

Reports indicated that sunflowers were still blooming in parts of the country as late as September. ¹⁵

Excessive moisture throughout the season also promoted higher incidence of disease and pests, and larger infestation with weeds. Though no specific lodging problems with sunflowers were reported, the extensive lodging of the grain crop this year would point to similar problems with sunflowers; lodged sunflowers are much more difficult to recover.

USSR oilseed production, 1971-80¹

Year	Sunflower seed	Cottonseed	Soybeans	Other	Total
1,000 metric tons					
1971	5,663	3,691	535	262	10,151
1972	5,048	4,085	258	213	9,604
1973	7,385	4,363	424	343	12,515
1974	6,784	4,531	360	276	11,951
1975	4,990	4,807	780	149	10,726
Average	5,974	4,295	471	249	10,989
1976	5,277	4,511	480	232	10,500
1977	5,904	4,693	540	175	11,312
1978	5,333	4,804	634	243	11,014
1979	5,414	4,510	467	196	10,587
1980	4,650	² 5,300	² 540	² 190	² 10,680
Average	5,316	² 4,764	² 532	² 207	² 10,819

¹Does not include oilseeds from fiber flax and hemp. ²Estimate. Source: *Vestnik Statistiki*, various issues.

¹⁵ *Izvestiya*, October 2, 1980.

The 1980 harvest progress was the slowest in a decade—further aggravating losses. The bulk of the crop, usually harvested by mid-October, was only half completed by this period, with almost a third of the preliminary sown area still left unharvested at the end of October. It is very probable that a considerable portion of the crop was cut for silage, indicating above-average abandonment. Although the sunflower area was reported in March 1981 at 4.35 million hectares, it is likely that only 4.1 million hectares were actually harvested.¹⁶

Cottonseed output in 1980 was expected to increase considerably over 1979 and reach about 5.3 million tons.

Soybean production will probably recover somewhat from last year's abysmal performance, increasing to 540,000 tons, slightly above average production for the last 4 years. The potential need to develop soybeans into a significant crop in the USSR has been acknowledged for several years but little headway has been made thus far. Expansion has been slow, and although soybean production has been introduced into parts of the Ukraine, southern Caucasus, and southern Kazakhstan,¹⁷ 90 percent are still produced in the traditional growing areas in the Far East. Significantly higher yields have been obtained from soybeans produced on irrigated fields, but expansion of these areas has been slow.

Acceptance of soybeans in other areas of the Soviet Union even as a rotational crop has also been slow, and proposed expanded soybean areas have not been accompanied by adjustments in crops already in production. In addition, farms do not have sufficient incentive to produce soybeans as opposed to grain, fodder, and sunflowers, which are considered more profitable. One Soviet newspaper article pointed out that additional incentives could entail giving soybean-producing farms privileges in purchasing mixed feed and oilseed meal.¹⁸ Large-scale expansion of soybean production is severely limited by similar problems plaguing sunflowerseed production—inadequate varieties; lack of proper equipment, herbicides and fertilizers; and a failure to implement proper agronomic practices.

With slow expansion of soybeans and declining sunflower yields, the Soviets will need to continue importing soybeans. In 1980, the USSR imported an estimated 1.1 million tons of soybeans, primarily from Brazil and Argentina. In 1981, the Soviets are expected to import an estimated 1.5 million tons.

Vegetable Oil

Last year's total vegetable oil production fell to 2.6 million tons, 6 percent and 11 percent below 1979 and 1978, respectively (table 17). Lagging vegetable oil production is directly related to Soviet difficulties in maintaining and/or increasing sunflowerseed production. The

3-million-ton sunflowerseed shortfall from the planned 1980 level, means a loss of over 1 million tons of vegetable oil. Total vegetable oil production stagnated at an average of about 2.8 million tons during 1976-80.

Not only has the quantity of sunflower output declined, but there is considerable evidence of quality-related problems. During harvesting, reportedly 14-18 percent of sunflowerseeds were shattered, thus increasing oil losses. Furthermore, improper storage of wet and trashy seeds has resulted in increased free-fatty-acid levels and, consequently, a deterioration in seed quality. Recommendations were recently made to adjust Government procurement prices to reflect quality indicators. In the Northern Caucasus, for instance, farms are fined when they deliver seeds with above normal moisture and trash content to procurement points, but insufficient on-farm drying and storage facilities limit the effectiveness of the pricing incentives.¹⁹

The Soviets have needed to supplement domestic oilseed production with larger imports of soybeans and vegetable oil. In 1980, approximately 180,000 tons of soybean oil was expected to be produced from imported soybeans; in 1981 this will likely increase to about 260,000 tons. Soviet imports of edible vegetable oils have increased steadily since 1978. The USSR remains the world's largest producer of sunflowerseed, yet with steadily declining Soviet sunflowerseed exports, the United States overtook the USSR in 1980 as the world's largest exporter of sunflowerseed products. In 1981, Soviet vegetable oil imports may rise even further, possibly reaching 700,000-750,000 tons.

The 1981 production goal calls for a 12 percent increase above 1980 vegetable oil production, about 2.95 million tons.²⁰ This goal is close to 1977 and 1978 production levels. Given less extreme crop conditions and continued imports, the goal seems both reasonable and attainable.

Per capita consumption of vegetable oil in 1979, at 8.4 kilograms, was 1 percent above the previous year. Last year, consumption probably remained the same or perhaps increased slightly above 1979. Despite improvement in 1981, it is unlikely that per capita consumption of vegetable oil will reach the scientific norm of 9.1 kilograms.

Oilseed Meal

Higher soybean imports and significant imports of soybean meal boosted 1980 oilseed meal availabilities, estimated at 6 million tons.

Sunflowerseed, cottonseed, and soybean meal account for over 95 percent of total oilseed meal production. The USSR oilseed crushings amount to about 10 million tons annually, producing about 4.5-5 million tons of oilseed meal and oil-cake. As noted earlier, inadequate production of feed protein is a chronic problem in the USSR. To effectively increase mixed-feed production, oil meal and oil-cake production or imports need to increase greatly.

¹⁶ Soviet official final crop data do not reflect abandonment.

¹⁷ *Pravda*, February 3, 1981, p. 2.

¹⁸ *Selskaya Zhizn*, February 13, 1980, p. 2.

¹⁹ *Maslo-Zhirovaya Promyshlennost*, #1, 1981, p. 14.

²⁰ *Maslo-Zhirovaya Promyshlennost*, #1, 1981, p. 2.

A major limitation affecting oilseed meal production appears to be an inefficient pricing system. Despite procurement price increases for most agricultural products over the past several years, prices for food industry by-products, including oilseed meal, have not changed in 20 years. Current price levels grossly underrate the feed unit value of oilseed products. Generally, world oilseed meal prices correspond to prices of agricultural crops that are comparable in feed value. In the USSR, however, price relationships are the opposite; oilseed meal is priced well below grain and fodder crops.²¹ Beginning in 1981, the procurement prices of soybeans were raised to 350 rubles per ton or by 35 percent.

Some oilseed meals, such as sunflowerseed and flaxseed do not contain anti-nutrient, toxic substances and thus do not require special processing. However, output of these meals has been limited by overall inability to expand crop production. Sunflowerseed meal is the largest of this type produced in the USSR and though relatively high in protein, is also very high in fiber. Sunflowerseed meal can be readily fed to ruminant animals but is not as efficient for poultry or hogs. On the other hand, oilseed meals such as cottonseed, soybeans, castor, and meal processed from fruit pits, do require special treatment to counteract toxic chemicals and anti-

nutrients. These added processing requirements have significantly reduced the efficiency of overall Soviet meal output. For example, soybeans, which contain enzymes that reduce feed digestibility, must be toasted; cottonseeds, which contain a toxic agent (gossypol) must undergo heat treatment prior to processing into meal. In both cases, facilities to carry out the needed treatments have been slow in developing. Another inefficient factor in soybean meal production is that much of the processing takes place in under-utilized sunflowerseed processing plants—thus resulting in high losses. As one means to expand soybean meal output, in August 1980, the Soviets purchased 4 straight-line soybean processing plants from Poland. First delivery was scheduled for last year and the remainder in 1981. Each plant reportedly has the capacity to process 500 tons of soybeans every 24-hours.

Oilseed production problems, processing difficulties, losses from improper storage, ventilation, and transportation, and the inherent limitation in the use of cottonseed and sunflowerseed meal in feed rations—all point to the growing importance to import soybeans and to boost soybean meal imports. Soybean meal imports in 1980 are estimated at 500,000 tons. Imports in 1981 will likely reach 1 million tons. (Mary Ponomarenko)

SUGARBEET PRODUCTION PROBLEMS CONTINUE

Sugarbeet production in 1980, at 79.6 million tons, was 4 percent above 1979's disappointing crop, but almost 19 million tons below planned output and the second poorest crop since 1975. This brings the 1976-80 average annual output of sugarbeets to 88.5 million tons, 16 percent above average output in the previous 5-year period (see table 13). Despite the increase, 1976-80 average production fell 8.1 million tons below the average goal of 96.6 million tons.

The Soviets faced their second difficult crop season in a row. An extremely wet, cool spring considerably delayed sugarbeet sowing; consequently, the vegetative period for sugarbeets decreased by almost a month in many areas.²² Critical field operations were interrupted and delayed by frequent rainfall.

Pravda, on August 17, 1980, carried a special decree confirming continuing problems in boosting sugar production. The decree undertook additional measures to alleviate some of the difficulties in harvesting, transporting and processing beets that have plagued the sugar industry in the past, and, in particular, the 1979 season. The decree called for better organization of each stage of operation from field to processing plant. The sugar processing season was to be shortened and sugar industry

workers given bonuses to speed work. Another policy initiative was to provide a 50 percent bonus above prescribed purchase prices for the purchase of sugarbeets usually kept on farms for feed purposes. Such a policy would reduce the sugarbeets available on the farms for fodder, but would increase the supply at beet processing centers, thereby increasing the overall output of sugar.

Poor weather in 1980 delayed the sugarbeet harvest, which got off to the slowest start in a decade. A late harvest can be beneficial, giving sugarbeets more time to mature, and increasing their mass and sugar content. On the other hand, the delays increase the likelihood that freezing temperature will occur before the harvest is completed.

Frozen beets have been a serious problem in past years and a key factor in reduced sugar output.²³ Despite the August 1980 decree, the large accumulation of sugarbeets left in fields was a major cause of 1980's reduced crop. As of October 13, just over 3 million tons of sugarbeets were reported left out in fields in the Western Ukraine, usually one of the most efficient producing areas. On October 10, *Sovetskaya Rossiya* reported that throughout the beet growing regions of the RSFSR, approximately 4 million tons of harvested beets lay unprotected in the fields—considerably more than reported in 1979, with much less of the total harvest completed. Freezing temperatures began in the third week of October, followed by a November thaw. The freeze/thaw conditions in 1980 were more severe than in 1979.

²¹ "Better Use of Food Industry By-Products Reported", *Ekonomika Organizatsiya Promyshlennovo Proizvodstva*, No. 5, May 1980, pp. 90-96.

²² *Sil'ski Visti*, April 30, 1980.

²³ *USSR Agricultural Situation, Review 1979 and Outlook for 1980*, p. 11.

In addition to above-average freeze losses, there is evidence that the Soviets experienced an unusual degree of difficulty with transportation and processing. Some areas processed beets as early as August, because transportation was available then but couldn't be guaranteed at the more optimal processing times. Persistent rainfall throughout the harvest period produced an extremely "dirty" crop. Excessive dirt slows down processing and requires greater maintenance of sugar processing plants. This factor probably lengthened down-time for plants and aggravated the back-up of beets, thus increasing storage losses. On December 17, 1980, *Pravda* reported that beet processing plants in the Ukraine received 4 million tons of dirt with the beets or 9-11 percent of estimated total beets procured in the Ukraine.

Total calendar-1980 USSR sugar production reached a disappointing 10.1 million tons (refined value), 500,000 tons below 1979 and 2.1 million tons below 1978. The 10.1-million-ton production figure includes processed raw sugar imports, beet sugar from the 1979 beet crop processed early in 1980, and beet sugar from the bulk of the 1980 crop processed in August-December. Total production was well below the planned output of 12.7 million tons.²⁴ Of this planned amount, 9.2 million tons were to be produced from domestic beets, with 9 million tons to be processed in the second half of the year.

Beet sugar production probably fell well below these levels, in all likelihood registering its second successive year of decline and dropping considerably below last year's disappointing output of 7.3 million tons. Output from domestic beets probably fell to only 6.7 million tons, 600,000 tons and almost 2 million tons below 1979 and 1978 output, respectively.

In 1979, sugar production from domestic beets was boosted by a large 1978 crop, which had a more favorable growing season than either the 1979 or 1980 crops. But the 1979 carryover did not aid 1980 sugar production. Furthermore, overall unfavorable crop conditions in 1980 caused low quantity and also poor quality of beets with low sugar content. Beets in the Ukraine, which produces about 60 percent of total USSR sugarbeets, were below-normal size when harvesting began. *Pravda Ukraina*, on November 29, 1980, reported processing shortfalls and abnormally high sugar levels in molasses by-products, indicating reduced output of refined sugar.

The slight 3.4-million-ton sugarbeet increase over 1979 will not result in increased sugar output. An additional factor is that sugarbeet procurements were probably below 1979. For example, in 1979, 91 percent or 69.3 million tons of the reduced crop was procured by the Government (table 18). This would imply that about 72 million tons should have been procured from the 1980 sugarbeet crop. However, procurements in RSFSR (which produces roughly 30 percent of total USSR sugarbeets) indicate that only 81 percent of the 1980 crop was procured. These figures may reflect the extreme 1980 harvest conditions and the extent of possible field damage that would prevent traditional procurement levels. If so, it is likely that Ukrainian beet procurements were also

below normal levels. Thus, estimated procurements in 1980 may only have reached 65 million tons, about 6 percent below a year earlier.

The USSR has had to import sugar to compensate for the successive lags in domestic production. Average annual imports of sugar during 1976-80 almost doubled 1971-75 average imports (table 19).

Traditionally, the bulk of Soviet sugar imports have been raw sugar, over 90 percent of which was supplied by Cuba. In 1980, the USSR imported 3.8 million tons of raw sugar, equalling average imports for the past 5 years. However, given the shortfalls in Cuban sugar production, only 2.7 million tons came from Cuba; the remainder was primarily supplied by Brazil, the Philippines, and Thailand.

Despite large imports, Soviet per capita consumption of sugar in 1980 probably did not increase to the planned 50 kilograms. Instead, it most likely remained at 1979's level of 42.8 kilograms or decreased somewhat. Despite stagnating per capita consumption, current imports are not sufficient to meet even this level of demand. Furthermore, it is likely that stocks built-up from 1978's good harvest were close to depletion or were virtually depleted by the two successive shortfalls in sugarbeet production.

Therefore, even assuming more normal sugarbeet production in 1981 and better sugar outturn from domestic beets, Soviet import demand this year will remain strong. The USSR will have to import above-average amounts in order to begin replenishing stocks. It will take at least two average or above-average sugarbeet crops to rebuild needed stocks and to begin to meet growing demand.

Weather remains the single most important factor influencing production. However, the Soviets have had considerable difficulty placing sugarbeet production on an efficient, large-scale, mechanized basis, thereby reducing dependence on hand field operations, e.g. thinning, cleaning, sorting, etc. The mechanized harvesting presently utilized has proved inefficient and consequently has resulted in heavy losses. Reportedly, as much as 30 percent of harvested beets are seriously damaged, with resultant sugar losses.²⁵ Poor storage facilities, poor rotational and harvesting practices, inadequate supplies of modern equipment, herbicides, pesticides and fertilizers, have contributed to highly variable yields and limited output.

The prospects for increasing sugar output from domestic beets is even more pessimistic. Despite the 1976-80 general success in raising sugarbeet production, sugar outturn from beets has declined. Total sugar production in 1976-79 rose to an average 10.8 million tons, somewhat more than average output in the previous 5 years. The increase was mainly due to increased raw sugar imports. At the same time, average beet sugar production has declined from 8.64 million metric tons in 1966-70 to 7.77 million metric tons in 1971-75 and to 7.56 million metric tons in 1976-79.

²⁵"Sovershenstvovanie organizatsii proizvodstva—pyt k uvelicheniyu produktsii", *Ekonomika Selskovo Khozyaystva*, #5, 1980, p. 18.

²⁴ *Sakharnaya Promyshlennost* #7, 1980, p. 4.

Some measures have been taken to change this trend. Farm procurement prices are no longer based solely on a weight basis. A new system of farm payment also takes into consideration the sugar content of produced beets.²⁶ Also, a relatively new practice of bringing production and processing responsibilities closer through direct con-

tracts, introduced in Yampolskii Rayon, met some success, but is gaining acceptance slowly.²⁷

It will be difficult for the USSR to appreciably raise average sugar production from domestic beets. This decline and its associated factors put further pressure on the Soviets to continue importing heavily in the near future. (Mary Ponomarenko)

POTATO CROP—A DISASTER

USSR potato production in 1980 fell to a disastrous 67 million tons—26 percent below output in 1979, 36 percent below the planned goal, and the lowest level of output since 1962. The sharp decline in output resulted from extremely unfavorable weather conditions over the major potato-growing areas in European USSR during the seeding, growing, and harvesting periods.

A late spring seriously delayed potato seeding. In the RSFSR, for instance, which produces about half of total potatoes in the USSR, only one-fourth of the potato area was seeded in optimal time. Prolonged, excessive rainfall, and below normal temperatures during the summer months caused serious delays in tuber development and maturation. Reports also indicated that tubers rotted while in the ground because of standing rainwater in the fields. Furthermore, infestation of weeds, pests, and diseases also caused further damage to the crop.

During the harvest period, which began late and was complicated by wet conditions, press reports emphasized the need to save the best quality potatoes from the crop for use in 1981 seeding.

The potato area, which has been shrinking steadily but gradually since a sharp 10-percent drop-off in 1976, fell again in 1980 by 30,000 hectares from a year earlier. The 6.94 million hectares planted were the smallest in 20 years. It is expected that this gradual downward trend in area will continue in 1981 since it appears that the slowly decreasing potato area in recent years may be based on a policy decision to boost yields rather than area. In 1979, for instance, despite a 1-percent drop in area, potato yields rose almost 7 percent to a near record. In 1980, however, yields dropped by a quarter.

Of the three major potato producing regions in the USSR, the largest percentage drops in production occurred in the Ukraine and Belorussia, which produce about 26 percent and 16 percent, respectively, of total potato production in the USSR. Output in the Ukraine, at 13.1 million tons, fell 43 percent below 1979, while output in Belorussia, at 9.3 million tons, fell 64 percent—in both cases to the lowest levels of output since 1953 and 1963, respectively. Output in the RSFSR fell 19 percent to 37 million tons—the lowest level since 1972.

Potatoes continue to hold an important position in the USSR both as food and as feed. Although the Soviets have attempted to lower carbohydrate intake in the Soviet diet in the past several years, potato consumption still remains well above established scientific norms,

because of the failure to adequately supply consumers with substitute products such as meat, vegetables, and fruit. Potato consumption in the past 10 or so years has stabilized at about 120 kilograms per capita, following a sharp drop in 1960. This, however, is still almost 30 percent above the recommended consumption norm.

With a year of sharp decline in potato output, as in 1980, together with a decline in meat, vegetable, and probably fruit output, the importance of potatoes for food is heightened. It is expected that the Soviet regime will make every attempt to maintain the supply of potatoes for food, but the task will be a difficult one. In previous years, about 30-32 million tons from potato crops averaging 85-90 million have been used for food. With a crop of 67 million tons, however, it is very probable that potato food use will be lowered, perhaps to about 27 million tons. Another factor in lowering food use is that the quality of potatoes from the 1980 crop was undoubtedly quite poor.

In most years of poor potato crops, the Soviets turned to East European countries for supplemental supplies for food. However, current prospects for obtaining potatoes from those countries are not good because 1980 output in East Europe fell sharply, especially in Poland where output was the lowest since 1945. With some concern about the availability of good quality potatoes for seed use from the 1980 crop, the Soviets in January 1981 purchased 40,000 tons of seed potatoes from Holland alone.

In September, potato supplies in collective farm markets (which normally carry better quality potatoes) in some urban areas were reported to be very short. Potato prices in these markets were far above normal prices. In state stores, potatoes were available and prices remained virtually unchanged, but quality reportedly was very low.

With the low potato output in 1980, the availability of potatoes for feed, mainly for hogs, also dropped. Adjustments in hog numbers in the private sector—a large user of potatoes for feed—were made, thus hog feeding demands probably were reduced temporarily. Nevertheless, the potato shortfall will undoubtedly cause a further strain on the already tight grain/feed situation in 1981. Furthermore, with lower potato supplies available for food, it would appear that livestock potato feeding would be sacrificed first. This could lead to further adjustments in hog numbers (especially in the private sector) probably in the first part of 1981.

The original 5-year average plan (1976-80) for potato production, calling for 102 million tons, was not met. Actual average output reached only 82.6 million tons, down almost 19 percent from plan and also 8 percent and 13 percent below average output in the 5-year periods of 1971-75 and 1966-70, respectively. (Angel O. Byrne)

²⁶ *Sil'ski Visti*, June 8, 1980.

²⁷ *Sovetskaya Rossiya*, May 18, 1980, p. 2.

VEGETABLES AND FRUIT DECLINE

Vegetable output in the USSR totaled 25.9 million tons in 1980, down close to 5 percent from 1979 and down 9 percent from the revised-downward plan in 1980.²⁸ The vegetable area reached a record 1,715,000 hectares, up by 4 percent.

Data for 1980 on vegetable output by type are not yet available. Data for 1979 indicate that output of cabbage, table beets and carrots declined from 1978 levels by 17, 10, and 24 percents, respectively. However, production of cucumbers, tomatoes, and onions rose by 37, 10, and 1 percents, respectively. The area, yield, and production of selected vegetables are shown below.

USSR total fresh vegetable imports (including potatoes) in 1979 reached 147,100 tons, down by 19 percent from the already reduced level in 1978. Major suppliers were Bulgaria, Romania, and Egypt. Imports from Bulgaria and Romania fell in 1979 by 2 percent and 10 percent, respectively. Imports from Egypt fell from 29,400 tons in 1978 to about 3,000 tons in 1979. Of total USSR fresh vegetable imports in 1979, tomatoes accounted for 58 percent and onions for 13 percent. In both instances, however, these imports dropped in 1979—tomatoes by 4 percent and onions by a sharp 60 percent. Canned vegetable imports in 1979 continued on the upswing, reaching 11 billion cans. Traditional suppliers were Bulgaria, Hungary, and Romania. In 1980, fresh vegetable imports were 133,000 tons, down almost 10 percent from a year earlier.

The Tenth 5-Year Plan's annual-average vegetable output called for 28.1 million tons—later revised downward slightly to 27.6 million. Actual average output, at 26 million tons, was below plan.

²⁸ The original 1980 plan was revised down from 30.3 million tons to 28.4 million.

Fruit production (including grapes) was not included in the USSR 1980 plan fulfillment report. It is estimated that output probably fell somewhat below the 16.3-million-ton output in 1979 and the revised plan for 1980.²⁹

Data for 1979 indicate that of total fruit output, pome fruits and berries accounted for almost a half, while grapes accounted for over a third. Pome fruits and berries increased by 21 percent, and grapes rose by 11 percent to a record high. Stone fruit dropped, however, by 11 percent. The largest percentage increase in fruit output occurred in citrus, which rose a sharp 69 percent from 1978 and reached a record. USSR production of selected fruits during 1971-79 is shown below.

In 1979, USSR imports of total fresh fruit reached a record 907,000 tons, of which apples and oranges accounted for more than half. Whereas imports of apples increased 29 percent to a record volume, imports of oranges dropped 4 percent to the lowest level since 1971. Of total lemon imports, 64,000 tons in 1979, the United States supplied 7,505 tons, 36 percent below that in 1978. Dried fruit imports in 1979 totaled 109,000 tons, down 3 percent from a year earlier. Imports of selected fresh and dry fruit during 1976-79 are shown below.

The original Tenth 5-Year Plan's annual average for total fruit production, set at 17 million tons, was revised down to 16.4 million tons. Based on an estimated fruit output of somewhat over 15 million tons, the revised 5-year average goal probably was not met.

Following the October 1980 Plenum, an All-Union Ministry for Fruits and Vegetables, to be headed by N.T.

²⁹ The original 1980 Plan called for fruit output of 19.1 million tons, but this was revised downward to 16.2 million tons.

USSR area, yield, and production of selected vegetables, socialized sector, 1970-79

Category & Year	Cabbage	tomatoes	Onions	Table beets	Carrots	Cucumbers	Garlic
<i>Area</i>	<i>1,000 hectares</i>						
1970	257	215	97	49	72	158	NA
1976	278	279	120	68	92	142	NA
1977	268	278	120	73	90	141	8
1978	280	278	121	70	89	133	9
1979	272	283	127	71	88	138	8
<i>Yield</i>	<i>Centners per hectare</i>						
1970	198	142	73	160	138	73	NA
1976	245	166	95	203	149	61	NA
1977	210	150	85	222	161	73	22
1978	254	180	115	201	168	59	23
1979	219	194	110	179	130	80	21
<i>Production</i>	<i>1,000 metric tons</i>						
1970	5,089	3,064	707	791	1,002	1,139	NA
1976	6,798	4,637	1,135	1,396	1,369	867	NA
1977	5,637	4,172	1,016	1,615	1,442	1,026	17
1978	7,177	5,046	1,386	1,459	1,512	811	23
1979	5,983	5,536	1,402	1,311	1,153	1,115	17

**USSR imports of selected fresh and dry fruit,
5-year averages, 1976-79 annual**

Category	1966-70 average	1971-75 average	1976	1977	1978	1979
<i>1,000 metric tons</i>						
Fresh Fruit						
Apples	219	320	358	311	331	427
Oranges	201	318	319	335	299	286
Lemons	54	65	88	75	74	64
Mandarins	11	16	7	19	38	48
Bananas	17	18	5	37	38	32
Grapes	46	48	43	27	31	23
Pineapples	4	7	6	6	10	4
Other	30	26	25	31	26	23
Total	582	818	871	841	847	907
Dried Fruit						
Raisins	58	53	58	62	53	61
Dates	17	32	26	19	38	22
Prunes	10	9	6	12	9	7
Other	17	10	11	20	14	19
Total	102	104	101	113	114	109

Kozlov, was established. Formerly, fruit and vegetable production, procurements, and supply in the USSR was under the three-way control of the Ministry of Agriculture, the Ministry of the Food Industry, and the Ministry for Internal Trade.

The formation of this new Ministry, which evidently will have full authority and control over all aspects of fruit and vegetable production and distribution, points out the Soviet regime's recognition of the need to further develop and strength this segment of its economy in order to boost supplies to Soviet citizens, and to eliminate the large failings inherent in its present-day fruit and vegetable distribution system.³⁰

It is doubtful whether the workings of the new Ministry will have immediate results. The next several years should show, however, greater emphasis and larger investments made in fruit and vegetable production; and, more importantly, in the establishment of a more efficient (and perhaps more modern) system of transporting, refrigerating, and packaging perishable produce. (Angel O. Byrne)

**USSR selected fruit output, 5-year averages,
1971-79 annual**

Year	Grapes	Citrus	Stone fruits	Pome fruits and berries
<i>1,000 metric tons</i>				
1966-70 average	3,297	59	1,394	4,114
1971	4,467	38	1,585	5,839
1972	2,786	52	1,227	5,178
1973	4,583	54	1,862	6,496
1974	4,608	122	1,771	5,579
1975	5,400	154	1,490	6,748
1971-75 average	4,369	84	1,587	5,968
1976	5,442	128	1,739	7,530
1977	4,255	226	2,038	8,337
1978	5,498	195	1,587	6,689
1979	6,087	330	1,414	8,079

USSR FOREIGN TRADE

Overall Trade

In 1980, the value of Soviet foreign trade amounted to 94 billion rubles (about \$136 billion at current 1981 Soviet official exchange rates), up 17 percent from a year earlier.

Exports were valued at 49.6 billion rubles (about \$71 billion), while imports were valued at 44.5 billion rubles (about \$64 billion). Export and import levels both rose 17 percent over last year.

In 1980, about 54 percent of Soviet trade was with other socialized countries, compared to 56 percent in 1979. Over a third of Soviet imports originated in Western industrialized countries, while about 11 percent originat-

ed in developing countries—up from an 8 percent share in 1979.

Western industrialized countries accounted for almost 32 percent of total Soviet exports, up from a 30 percent share in 1979. Developing countries accounted for about 14 percent, compared to about 15 percent last year.

³⁰ In the 26th Congress of the Communist Party in February 1981, General Secretary Brezhnev pointed out that during 1976-80, the average annual per capita consumption of vegetables and fruit increased at a considerably lower rate than production—the main reason for the difference being losses in the distribution system.

In 1980, West Germany, Finland, France, and Italy were the leading western-country trade partners with the USSR. The United States dropped from 8th place in 1979 to 16th place in 1980, probably a direct result of the sales suspension, and a decrease in Soviet gold sales. Total USSR imports from Canada more than doubled in value in 1980, while imports from Argentina quadrupled. Imports from Australia nearly doubled.

The distribution of Soviet trade for 1978, 1979, and 1980 is shown below.

Agricultural Trade

Soviet data on 1980 agricultural trade are not available as yet. Soviet agricultural imports in 1979, valued at approximately \$13.3 billion, increased by about 30 percent over the 1978 level and represented 23 percent of Soviet total imports—versus a 20 percent share of the total in 1978 (table 20).³¹

Grain was the principal agricultural import item, valued at \$3.4 billion, and represented over a quarter of total Soviet agricultural imports. Raw and refined sugar imports were valued at \$33.2 billion. Sugar and grain imports made up half of total Soviet agricultural imports. Alcoholic and non-alcoholic beverages, coffee, cocoa and tea, tobacco and tobacco products, wool, vegetables and potatoes, fruits and berries, oilseeds, meat and meat products, comprised 36 percent of Soviet total agricultural imports. By East European/USSR Branch estimates, Soviet grain imports in 1979 reached 24 million tons, and exceeded the level reported in 1973 (table 21).

In 1979, increased Soviet imports of grains, oilseeds, vegetable oil, and meat and meat products accounted for \$2 billion of the \$3 billion increase in total agricultural imports. Compared to 1978, grain imports rose by \$1 billion, meat and meat product imports (valued at \$844 million) increased more than three-fold. Oilseed imports, at \$542 million, doubled in value; and vegetable oil imports increased by 75 percent to a value of \$146 million.

In 1979, as in 1978, Cuba was the USSR's leading agricultural trading partner, accounting for almost a quarter of Soviet total agricultural imports and virtually all of Soviet imports of raw sugar. The United States again held the position as the USSR's second largest source of agricultural imports, providing about 22 percent of the total compared to a 17 percent share in 1978. The United States provided about 70 percent of Soviet grain imports (an estimated \$900 million increase over calendar 1978) and over 90 percent of Soviet oilseed imports (an estimated \$270 million again over 1978). The largest growth in Soviet vegetable oil imports were with Brazil, Argentina, the Philippines, and the United States.

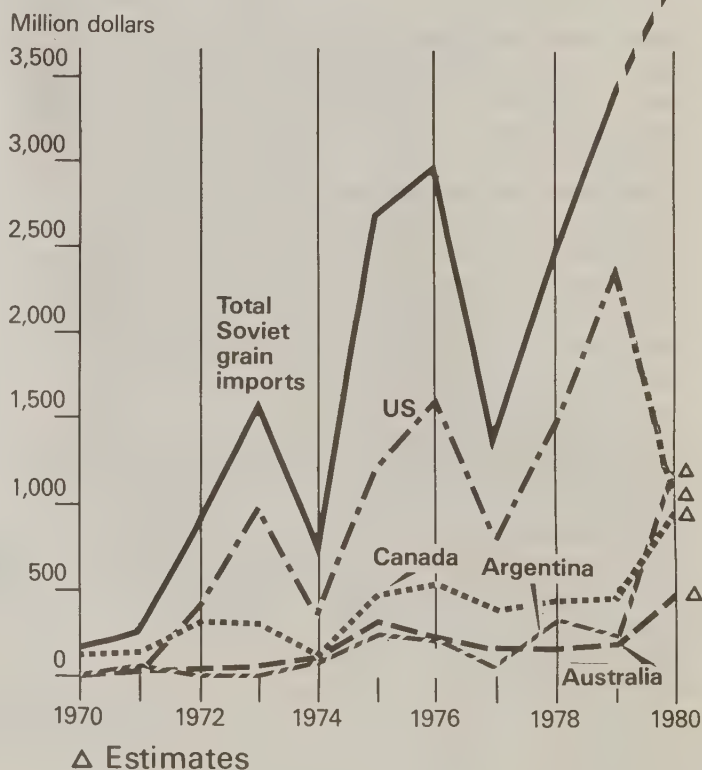
³¹ Dollar figures are converted from official Soviet statistics using U.S. dollar exchange rates for the Soviet foreign exchange ruble as announced by the State Bank of the USSR. In 1980, one ruble averaged \$1.54. Exports and imports are FOB.

USSR foreign trade

Direction	1978	1979	1980
<i>Billion rubles</i>			
<i>Exports</i>	35.7	42.4	49.6
to Socialist countries	21.3	23.6	26.9
to Western industrialized countries	8.7	12.5	15.8
to Developing countries	5.7	6.3	6.9
<i>Imports</i>	34.5	37.9	44.5
from Socialist countries	20.7	21.5	23.7
from Western industrialized countries	11.0	13.2	15.7
from Developing countries	2.8	3.2	5.1

Figure 3

USSR Grain Imports by Country or Origin, 1970-1980



Soviet agricultural exports have moved irregularly over the past few years. In 1979, total Soviet agricultural exports, valued at \$2.79 billion, were 19 percent above 1978. Cotton was the leading agricultural export, estimated at about \$1.2 billion (table 22, see also table 23).

Soviet grain exports in 1979 were an estimated 20 percent of total agricultural exports, representing an increase of over two and a half times the 1978 level. Cuba, North Korea, Czechoslovakia, Vietnam and Afghanistan were the major markets, with Cuba importing about twice the level of any of the other countries.

Soviet exports of vegetable oil, traditionally an important export item, have continued to decline. Vegetable oil exports were the third largest of agricultural export items in 1974 with a value of \$346 million. In 1979, they reached only \$91 million, having been replaced by exports of flour and pulse products and furs in importance.

U.S.-USSR TRADE

On January 1, 1981, the Secretary of Commerce, in accordance with authority contained in Section 6 of the Export Administration Act of 1979, as delegated to him by the President, extended U.S. export controls maintained for foreign policy reasons. Included in the extension were export controls on agricultural commodities destined for the USSR feed-livestock economy (except for the remaining portion of the 8 million tons of wheat and corn authorized during the last year of the U.S.-USSR Grain Agreement), phosphatic fertilizers, including phosphoric acid in all levels of concentration, and certain other products such as equipment for the exploration and production of oil and gas. The extension, which continued controls imposed in response to the Soviet invasion of Afghanistan, was taken to demonstrate to the Soviets that they cannot with impunity engage in acts of aggression that threaten fundamental interests of the United States.

The sales suspension remains under review at the highest levels, but, without an acceptable response from the USSR, no decision has been reached on the appropriate circumstances for ending the sales suspension.

In 1980, the total value of U.S. exports to the USSR fell to \$1.5 billion, down from \$3.6 billion the year before. The sales suspension was the primary cause for the decline. The value of U.S. imports fell from \$873 million in 1979 to \$431 million in 1980, as a result of a decrease in gold imports.

U.S. Agricultural Exports and Imports

The value of U.S. agricultural exports to the USSR (adjusted for transshipments) which amounted to \$3.0 billion in 1979, fell to \$1.2 billion as the sales suspension took effect (table 24). Grain exports, which were valued at \$2.4 billion in 1979, fell to \$1.1 billion; and soybeans, valued at nearly a half-billion dollars in 1979, plunged to \$47 million in 1980. Under the terms of the sales suspension, soybean sales were halted early in 1980. Grain exports reflected the remainder of 8 million tons authorized in the fourth year (October 1, 1979-September 1, 1980) and in the last year of the Grain Agreement.

Grains and soybeans constituted, by far, the bulk of U.S. agricultural exports to the USSR and were the most important products affected by the suspension. Commodities which were not related to the Soviet feed-livestock economy were removed from the validated export licensing procedures in February 1980, but remained under the Office of Export Administration (U.S. Department of Commerce) surveillance. Fruits, nuts (except peanuts), and berries fell into this category of controls and their

Soviet trade statistics record as imports and exports goods purchased outside the USSR and shipped directly to third country destinations. In this section, no adjustments are made for these transactions. (Mary Ponomarenko).

export to the USSR increased in value from \$15.6 million to \$18.5 million in 1980. Certain other products, which might have substituted for feed or meat under certain circumstances, were brought under a case-by-case licensing procedure. Among the criteria used by the Office of Export Administration in deciding whether or not to allow shipments of such products were: (1) whether the commodity had been historically exported to the USSR; (2) whether the quantity was reasonable in light of normal trade patterns; and (3) whether the shipment was likely to be diverted to another end-use. Inedible tallow and hides and skins fell into this third category. Exports of tallow dropped by half, to \$28.2 million, and cattle hide sales dropped from \$3.2 million to \$65,000 last year. The U.S. Agricultural Counselor in Moscow estimates that the lost sales of agricultural products to the USSR in 1980 amounted to about \$3.0 billion in 1980.

As shown below, the sales suspension reduced the quantities of grains and soybeans shipped to the USSR to the lowest level since 1974.

Phosphoric acid and phosphatic fertilizers were the second major product group whose shipments to the USSR were prohibited. U.S. phosphate exports to the USSR totalled \$94 million (551,000 tons) for 1979, of which 99 percent was superphosphoric acid (SPA). In 1980, shipments amounted to \$14.7 million before the suspension became effective. Exports of SPA took place under a 20-year counter-trade agreement between Occidental Petroleum Company and the Soviet Ministry of Foreign Trade. Occidental had agreed to sell one million tons of SPA to the Soviets in 1980 in exchange for ammonia, urea, and potash. Had not the sales suspension intervened, the value of SPA sales would have been about \$400 million.

**U.S. exports of grains and soybeans
to the USSR, 1971-80**

Year	Total grain	Wheat	Corn	Other grains	Soybeans
<i>Million metric tons</i>					
1971	0.2	(¹)	0.2	(¹)	0
1972	6.8	2.7	3.1	1.0	.4
1973	12.9	8.7	4.2	0	.5
1974	3.1	1.1	2.0	0	0
1975	7.4	4.1	3.2	.1	0
1976	10.6	1.7	8.8	.1	.6
1977	6.7	3.0	3.6	.1	.6
1978	12.9	2.9	9.9	.1	.7
1979	17.6	5.4	12.0	.3	1.8
1980	6.0	1.8	4.2	0	.2

¹Less than 50,000 tons.

Note: Transshipments not included.

In 1980, imports of agricultural products from the USSR were valued at \$9.6 million as compared to \$14.7 million in 1979. Certain furskins, tobacco fillers, and casein were the major import commodities.

Impact of the Sales Suspension On the USSR

The effects of the U.S. sales suspension, although difficult to isolate from those of the USSR's own agricultural shortcomings, constituted a troublesome element for Soviet planners. Overall, the economic impact has been more than trivial.³²

After the sales suspension, the theme of self-sufficiency became more pronounced in Soviet economic literature even though this would require additional expenditures. The Soviets' new 5-Year Plan, for example, aims at increasing soil fertility and yield capacity for grain crops, improving fodder production, expanding protein availability for the livestock sector, and, in general, increasing feeding efficiency. Such programs represent a likely policy response to the sales suspension.

Data suggest the Soviets intended to import about 37.5 million tons of grain in the 1979/80 July-June marketing year, 27.5 million of which would have come from the United States. The suspension denied the Soviets about 12 million tons of U.S. grain, forcing the Soviets to search the world for additional supplies, pay higher prices, reduce feed use in the latter half of the year and draw down stocks. While they were able to make up about half the amount of U.S. denied grain, Soviet livestock output suffered.

The Soviets entered 1980 with record inventories of cattle, cows, hogs, and poultry. Heavier-than-normal slaughter of livestock (primarily hogs) occurred in the first two months of 1980. During the year, hog, and sheep and goat numbers declined slightly from last year's level; both hogs and cattle were slaughtered at lighter weights and in generally fewer numbers. The Soviets made a major decision to preserve herds, especially in the socialized sector later in 1980, and meat output fell.

The 1980 grain harvest amounted to 189 million tons, 46 million tons below plan, and the potato crop was the worst since 1962. Even if the Soviets acquire record grain imports, nearly a quarter of the estimated total of about 35 million tons represents the last U.S. shipments under the Grain Agreement. Unless the Agreement is renewed, the Soviets can count on no further U.S. grain as long as the suspension remains in effect.

The 1980 forage crop is thought to be of low nutrient value. To improve feeding efficiency, and thereby con-

serve on grain, the Soviets will likely increase imports of soybeans and soybean meal, but the suspension denies them access to the world's largest supplier of both products.

Of course, the suspension of phosphates delays the development of liquid fertilizer production capability. Utilization of liquid fertilizer is important to the Soviets because of its ease of application on irrigated crop land, reduced capital investment costs, and product versatility. Significantly, at the 26th Party Congress, the Soviet Minister of Agriculture, V. K. Mesyats, noted that despite the substantial increase in production and deliveries of mineral fertilizers, shortages still existed in many arable regions. He mentioned a shortage of phosphorus fertilizers, in particular. The Minister added: "Approximately half the country's grain fields still receive no fertilizer at all."³³ (Anton F. Malish)

U.S.-USSR Grain Agreement

In October 1975, the United States and USSR signed an agreement that established 6 million metric tons of grain as the minimal annual Soviet purchase, on an October-September year, effective until September 30, 1981. The 6 million metric tons were to be purchased through commercial channels and approximately divided evenly between wheat and corn. The Soviets had the option to purchase an additional 2 million tons of either, without government-to-government consultations.

The U.S.-USSR Grain Agreement provided the Soviets with assurances that the U.S. Government would not arbitrarily disrupt U.S. grain exports to the USSR. The United States promised to employ its "good offices" to facilitate sales, unless total U.S. grain availabilities fell below 225 million tons. The Soviets also agreed to try to space purchases and shipments more evenly and assured the United States that imported U.S. grain was for domestic consumption. Sales were to be made at prevailing market prices, in accordance with normal commercial terms.

Semi-annual consultations were to be held to discuss Soviet grain demand and U.S. supply. Additional consultations could be called by either side. Also, the U.S.-USSR Maritime Agreement provision would apply to all grain trade. The Maritime Agreement also expires in 1981.

The U.S.-USSR Grain Agreement acknowledged the importance of grain trade to both countries and laid down the framework for its continued operation and development. Even after the sales suspension, consultations were held and the minimum levels of trade were maintained. All in all, most observers believe the Agreement functioned well and helped limit the types of disruptions that characterized the 1972-75 period.

Despite the sales suspension limiting grain export levels in the fourth and fifth years of the Grain Agreement,

³² An earlier paper in this series, *The U.S. Sales Suspension and Soviet Agriculture—An October Assessment* explores possible economic aspects of the suspension in some detail. Much of the information from that paper is updated in appropriate sections of this report. This section, therefore, is a general summary of developments in Soviet agriculture that are thought to reflect the sales suspension.

³³ FBIS, *Daily Report, Soviet Union*, Proceedings of the 26th CPSU Congress, Volume VIII, p. 13.

the United States will export a total of about 55 million tons of grain during the life of the Agreement. Even with the suspension, the USSR placed second only to Japan as a major U.S. grain market.

The circumstances that originally precipitated the Grain Agreement continue to exist. The USSR remains a large, highly-variable grain producer with the potential for major fluctuations in its required imports. The Grain Agreement proved to be a viable mechanism to help cope

with rapid shifts in Soviet demand and U.S. supply, which are more likely to increase rather than diminish, in the future.

The decision to extend, or renegotiate the Grain Agreement is currently dominated by foreign policy consideration. If the Agreement were extended, the present levels of 6-8 million tons of wheat and corn would make the USSR a significant market for U.S. wheat and corn. (Mary Ponomarenko)

CAPITAL INVESTMENT

Major Capital Outlays

Capital investment in the agricultural sector in 1980 reached 36 billion rubles, up 700 million rubles from a year earlier but one billion rubles below plan. Capital investment in agriculture accounted for 27 percent of total investments in the national economy, about the same as in 1979. Agriculture's share has remained essentially the same since 1974.

Total capital investments in agriculture during 1976-1980 reached 170.7 billion rubles, .6 percent below the plan but almost 30 percent larger than total investments made during 1971-75.

Of total investments made in the agricultural sector in 1980, a portion was allocated for construction and restoration of livestock production facilities. Investments resulted in additional shelters to house 10.6 million head of livestock (slightly less than in 1979) and 15.6 million head of poultry. Capacity for broiler production was boosted by 97 million head throughput annually, compared to 80 million a year earlier.

Total 1981 capital investment in agriculture is planned at 37.3 billion rubles, a modest .8 percent increase above that planned in 1980. Agriculture's share of total investment in the economy will remain the same. Farm machinery and equipment purchases will account for a third of total agricultural investments. Building and installation work (including over 15 billion rubles targeted for construction of production facilities) are planned to reach 21.6 billion rubles or 58 percent. A share of this investment will focus on boosting the livestock sector.

Irrigation and Drainage

In 1980, 700,000 hectares of newly irrigated land were brought into production, the same as the previous year but 56,000 hectares short of plan. Drainage was carried out on 650,000 hectares, 14 percent less than a year earlier and 200,000 hectares below the plan. Water was supplied to 4.7 million hectares of meadows and pastures, 23 percent less than a year earlier and 2.3 million hectares short of plan.

During 1976-80, new irrigated and drained land brought into production reached 3.8 and 3.65 million hectares, respectively, or 22.5 and 22.3 percent below planned levels.

In 1981, 7.6 million rubles of State investments and 200 million rubles of collective farm funds are to be allocated for land improvement and other land reclamation projects. Plans for 1981 call for 700,000 hectares of newly irrigated land to be brought into production and an additional 800,000 hectares to be drained; 5.6 million hectares of meadows and pastures will be supplied with water.

In 1979, there was no change in the share (over 6 percent) of the irrigated crop area to the total seeded crop area (217 million hectares). As in 1978, of the total area seeded to grain in 1979 only about 3 percent was on irrigated land. Similarly, the share of irrigated forage crops, sugarbeets, and potatoes and vegetables to total seeded areas did not change and stood at 8, 5, and 12 percents, respectively. All cotton in the USSR is under irrigation. In 1979, grain output on irrigated land accounted for 6 percent of total grain output, up from 4 percent in 1978. Over 4 and 29 percents of total wheat and corn-for-grain, respectively, were produced on irrigated land. This compares with 3 percent and 27 percent, respectively, in 1978.

Similarly, sugarbeet output on irrigated land accounted for 7 percent of total production; vegetables, 45 percent; and sunflowerseeds, 1 percent. Sugarbeet and vegetable output on irrigated land in 1979 showed a higher share of total output than in 1978. For sunflowerseeds, the ratio remained the same.

Farm Machinery

Deliveries of tractors to agriculture in 1980 totaled 347,000, down 2 percent from the number delivered in 1979, but slightly above plan. Truck deliveries, totaling 270,000, were up 1.6 percent from a year earlier and met the plan. Grain combine deliveries rose to a record 117,000, 4.5 percent above 1979 record deliveries but were .8 percent below plan.

During 1976-1980, tractor deliveries reached 1.8 million; trucks, 1.34 million; and grain combines, 539,000 units. Deliveries of tractors and trucks were 5 and .4 percents, respectively, below plan, but grain combines rose a modest .2 percent above plan. However, deliveries during 1976-80, in comparison with 1971-75, increased for tractors by 8 percent, trucks by 22 percent, and grain combines by 20 percent.

As of January 1, 1980, total truck inventories in the agricultural sector reached 1.57 million units, an increase of 2.6 percent over that date in 1979. Tractor inventories, 2.54 million, and inventories of grain combines, 706,000, were about 1 percent higher.

The slow growth in inventories indicates that the scrapping rate for trucks in 1979 was 15.1 percent; tractors, 12.8 percent; and grain combines, an estimated 15.9 percent. Compared with 1978 scrappings, the 1979 scrapping rate for trucks was 1.5 percent less, .9 percent larger for grain combines, and unchanged for tractors.

Although the USSR generally fulfilled its 1980 plan for agricultural machinery, the Ministry of Agricultural Machinery Building was severely criticized at the 1980 October Plenum. The machines produced were characterized as of low technical standards and with poor reliability. Plans for producing motors, tractor spare parts, fertilizer and pesticide applicators and cultivators were all underfulfilled. The poor quality output and "backward technology" reportedly led to inefficient use of labor and materials.³⁴ To signify the importance attached to correcting these problems, a Department of Agricultural Machinery was set up in the Central Committee of the Communist Party.

It is difficult to judge whether the shortage of machinery spare parts was a critical factor in gathering in the 1980 harvest, or whether the spare part shortages were worse than usual. *Selskaya Zhizn* on September 19, 1980 carried an article which indicated that the lack of key spare parts—tractor crankshafts, truck radiators, piston rings, etc.—was idling large numbers of vehicles just when machinery should have been used to full capacity. The same article also noted that supplies of diesel oil and gasoline to farms were being delayed.

In 1981, somewhat over 12 billion rubles will be allocated for deliveries of farm machinery and equipment to agriculture. Numbers of farm machinery by type to be delivered this year are not yet available. However, based on small yearly gains in deliveries in recent years, together with modest investment allocations, no great expansion in planned machine deliveries to agriculture is expected in 1981. However, an improvement in the spare parts situation could significantly increase the pool of available machinery.

Agricultural Chemicals

In 1980, mineral fertilizer production showed improvement over the reduced 1979 level. Output totaled 104 million tons, 10 percent above a year earlier but 10 percent below the revised-downward plan of 115 million tons. The original plan called for a 143-million-ton output (table 25).

Mineral fertilizer deliveries to agriculture (excluding feed additives) totaled 82 million tons, up 7.5 percent from a year earlier but 7 percent below plan (table 26). Feed additive deliveries (urea and feed phosphates) last year reached 2.7 million tons, an increase of almost 6

percent from a year earlier. Mineral fertilizer deliveries (excluding feed additives) during 1976-80, as compared with 1971-75, increased by 30 percent.

During 1976-79, the Soviet Union apparently encountered serious problems in its fertilizer industry. The incremental new capacity was less than in the previous four years—7.5 million tons per year on the average versus 8.6 million tons per year in 1972-75. Even that level owed much to the substantial single-year increase, 15.8 million tons, in 1979. The incremental increase in fertilizer production was much worse, averaging only 1.1 million tons per year in 1976-79, as compared to 7.2 million tons per year in 1972-75. In short, the Soviets obtained very poor returns from their additional capacity, partly because the severe winter of 1978-79 adversely affected production, but also because of serious deficits of important fertilizer raw materials (i.e., sulfur and phosphoric acid), the poor quality of Soviet chemical fertilizer facilities, and inability to rapidly absorb imported technology.

In recent years, the USSR has experienced difficulties in raising its output of phosphate relative to nitrogen and potash. Some improvement in phosphate deliveries occurred in 1979, while other mineral fertilizers declined, probably because of the new flow of superphosphoric acid (SPA) from the United States. These exports were expected to amount to 1 million tons annually during 1980-1997 had they not been brought under the validated export licensing procedure in February 1980.

Because the United States is the sole large-scale supplier of SPA, the Soviets suffered a serious setback in their liquid fertilizer production goals. During 1980, they countered by buying more finished phosphate fertilizers, planning adjustments in their plants to use lower-grade phosphoric acid, planning to make more SPA themselves, and making arrangements to purchase relatively small amounts of SPA (100,000-150,000 tons) from Belgium. During 1981, the Soviets undoubtedly will make additional arrangements to offset the denied U.S. product.

Most of USSR agricultural soils are acid and of low natural fertility; about 55 percent of them are deficient in phosphorus. Consequently, insufficient amounts of lime and phosphorus fertilizers are limiting factors in most agricultural areas outside of Kazakhstan. Although estimates of yield response to fertilizer application vary, it appears that if the Soviets were unable to replace the phosphate equivalent of the SPA they expected from the United States, their lost grain output might amount to about 7 million tons annually.

Much rests on Soviet plans to expand mineral fertilizer production, distribution, and application. Following the October Plenum at which General Secretary Brezhnev pointed out the need to improve fertilizer capacity and utilization, the Ministry of the Chemical Industry was divided and a new Ministry for the Production of Mineral Fertilizers was created. The 1981-85 plan (see page 23), devotes considerable attention to expanding mineral fertilizer production, reducing fertilizer losses in storage, transportation, and utilization, applying agro-chemicals more effectively, and making better use of organic fertilizer.

³⁴ *Selskaya Zhizn*, January 23, 1981.

For 1981, the output goal for mineral fertilizers is 113.8 million tons, an increase of 9.8 million tons or about 10 percent over 1980. Deliveries to agriculture are to amount to 88.6 million tons. If 1980 output represents the beginnings of a new trend, the planned amounts are possible, although past responses to new capacities sug-

gest that an increase of about half as much is more probable.

Production of chemical plant protection agents (insecticides, fungicides, herbicides, defoliants, etc.) in 1980 fell to 471,000 tons, down .8 percent from a year earlier and 23 percent short of plan. (Yuri Markish)

DIRECTIONS IN SOVIET AGRICULTURAL POLICY

In three recent Communist Party Central Committee Plenums (July 1978, November 1979, October 1980), General Secretary Brezhnev unexpectedly discussed, in unusual detail, the low levels of the nation's food supply and the need for more effective agricultural planning. These topics were previously dealt with only in general terms. In contrast, at the October Plenum Brezhnev said, "... we still encounter difficulties in supplying the cities and industrial centers with such foodstuffs as milk and meat." Party leaders have emphasized the improvement of food supply as the first priority in raising the living conditions of the Soviet people.

It is hard to judge the extent of problems with Soviet food supplies, or to compare last year with recent years. This past summer, however, numerous reports of shortages occurred in the Western press. These shortages of meat, milk, and dairy products, reportedly triggered worker discontent and work stoppages in Soviet motor-vehicle plants.³⁵ Since the summer, reports of food shortages have continued and a recent *Harpers* article in February 1981 by George Feifer detailed reports of meat shortages in Ulyanovsk, Gorky, Kuibyshev, and Yaroslavl. He reported that even in Moscow, milk supplies could not be assured; sausage, cheese, and specialty items "disappeared;" and the butterfat content of milk was reduced. Feifer characterized the situation as "much worse than in 1971 and worse than I'd expected from reading the Western Press."

However bad the food situation may be, it seems to have triggered an important transformation in Soviet agricultural policy.

The Food Program

At the October Plenum, Brezhnev emphasized agriculture's role in raising Soviet living standards. He stated:

... the Political Bureau of the Party Central Committee recently adopted a decision to prepare for a food program. What is meant is a program whose aim is to combine all matters in the development of agriculture and the branches of industry, procurement, storing, transportation, and processing which serve it, including matters in the development of the food industry and retail trade of food products ...

The main thrust of the food program is to gradually create an integrated agro-industrial complex to coordi-

nate the planning, financing, and management of activities "from farm to store."

The program calls for linking agriculture more closely with such industries as fertilizer and machinery manufacturing; land reclamation; feed processing; developing road networks, reliable transportation, elevators, and warehouses; and improving downstream facilities such as refrigeration and packing plants. In short, the program envisages increased production and much reduced losses in delivery of farm products to the consumer.

Government and Party Reorganization

The first elements of the "food program" involve reorganization of the government and party apparatus to better coordinate activities. Reorganizations to date include the new Ministry of Fruits and Vegetables, the new Ministry of Chemical Fertilizer, and the merging of two Forestry Ministries into the Ministry of Timber, Pulp and Wood Processing. In addition, a new department for farm machinery has been established in the Party Central Committee. These reconfigured organizations involve personnel changes, a desire to identify individual responsibilities, and efforts to concentrate administration and improve coordination.

A second important development was the election of Mikhail Gorbachev to the Politburo, only two years after his selection for the Central Committee. He is the youngest of the top party administrators and the only one whose background and education is especially connected with agriculture.

Gorbachev's special role with responsibility for developing the agricultural sector of the Soviet economy, reflects the great confidence in him by the Party leadership.

Emerging Soviet agricultural policy reflects several policies advocated by Gorbachev. These include:

- 1) The priority attached to agricultural development within the Non-Chernozem Zone;
- 2) The reequipment of agriculture with high quality farm machinery, especially that used for animal husbandry and feed production;
- 3) The extensive technical irrigation systems and land reclamation in arid areas of the Non-Chernozem Zone and of the Central Asian Republics; and
- 4) The development of subsidiary private plot production.

³⁵ See, for example, *The U.S. Sales Suspension and Soviet Agriculture, an October Assessment*, Supplement 1 to WAS-23, p. 21.

Increased Incentives for Private Plot Output

In January 1981, the Central Committee of the Communist Party and the USSR Council of Ministers issued a decree entitled "Additional Measures to Increase Agricultural Production by Subsidiary Private Plots." This decree is important because it continues and accelerates programs to increase production on private plots. Such programs began cautiously after Krushchev's departure and gained momentum following a 1977 decree that encouraged subsidiary private farms. The new decree is also significant because it clearly links the private plot with efforts to increase livestock product output.

In 1979, private plots of collective farm members totalled 3.86 million hectares, while other lands at personal use (the private subsidiary plots of state farmworkers, for example) totalled 3.70 million hectares. Combined, these subsidiary private plots comprised only 1.4 percent of all Soviet farming lands (sown land, fallow, orchards, vineyards, pastures, etc.), but they produced 30 percent of the meat, milk and eggs, 60 percent of the potatoes, and over 50 percent of the fruits and berries. On January 1, 1981, nearly a fifth of all livestock in the USSR was on subsidiary private plots.

Clearly, increasing incentives to subsidiary private-plot holders by appropriate ministries, organizations, collective and State farms, is an attempt to expand output of precisely those high-quality food products that the socialized sector has been unable to supply in adequate amounts, and to better integrate private-plot output into the planning process.

The new decree establishes no limitations on the number of livestock belonging to collective farmers, workers, employees and other people provided that the livestock are raised under contract with collective and State farms and cooperatives. The fattened livestock, poultry, and milk produced on private plots will be purchased by collective and State farms and cooperatives for sale to the State procurement organizations. The products purchased by these farms and then sold to the State can be included in the production volume and counted against their plan fulfillment requirements. They may also be included in calculations for over-plan bonus payments for quantity and quality.

The contract also commits the State and collective farms to provide subsidiary private farms with young animals and poultry, fodder, grazing and meadow rights, marketing services, and the terms of payments. Livestock on private plots without contracts are still limited by legal quotas but may be used in accordance with the owner's wishes.

Under the decree, the USSR Gosbank (State bank) is obligated to grant State and collective farms the short-term credit needed to settle accounts when the contract animals and produce are delivered. In addition, USSR Gosbank will provide workers and employees who are members of horticultural cooperatives with credits up to 3,000 rubles for acquisition or construction of garden cottages and improvement of garden plots. Under the 1977 decree, such credits were limited to 1000 rubles to be repaid in 5 years. The new credits can be repaid in 10 years, beginning after a 3-year grace period.

The 1981 decree permits not only workers and employees, but doctors, teachers, and pensioners on State farms to buy cows and heifers. It provides for allowances to State farms and organizations to enable them to sell their animals at half price. By the new decree, young families can obtain *free of charge* young livestock and also help in building farm facilities if a family member is a worker on a State farm or similar organization. Collective farms have been urged to participate in this program.

The 1981 decree includes many other incentives. Appropriate ministries, organizations, and collective and State farms are to provide: 1) greater access to pasture and hay-cutting lands in state forests; 2) plots for fodder production on idle land; 3) credits for acquisition of agricultural equipment; 4) allowances to build cooperative cowsheds; 5) help in transportation and procurement of agricultural production; 6) construction materials, fertilizers etc.; and 7) agronomical and veterinary services.

The new decree is in keeping with recent concerns that the USSR has not met the country's growing demand for meat and milk. By encompassing both production and marketing, it is consistent with the new concepts of agro-industrial planning and the establishment of the "food program." However, its main purpose seems to be in mobilizing additional reserves to overcome significant shortages of Soviet rural labor.

The decree seems covertly designed to make rural life more financially rewarding, to induce residual workers or pensioners back into active production, and to encourage urban dwellers and industrial workers to take a "second job" in the agricultural sector.

Greater Initiative for Farm Managers

In recent years, the Soviets have devoted increased attention to improving the planning of agricultural production and boosting its efficiency. Interestingly, efforts are directed toward expanding the independence of associations and enterprises and broadening the span of control for the individual farm managers.

In July 1979, the Communist Party Central Committee and the Council of Ministers decreed that, while Gosplan (State Planning Committee) is responsible for establishing control figures for basic economic indicators and norms, local production facilities and farms were responsible for providing counter plans for increasing production efficiency and finding additional material and production reserves.

At the October 1980 Plenum, General Secretary Brezhnev addressed the relationship between central planning and local initiative. While he reemphasized the overriding role of central planning of the national economy, he noted:

On the other hand, it is necessary to develop in every way the initiative from localities, of working collectives and managers for normal functioning of the economy. Most of current issues should be decided precisely at the places where they can be decided quickly, without undue delay and consultation.

Following the October speech, Z. N. Nuriyev, Deputy Chairman of the Council of Ministers, gave some indications of what might be involved. According to Nuriyev, "excessive tutelage" over farm managers should be eliminated. State and collective farms should be given "a strictly limited number of indicators" dealing primarily with inputs. Instead of a large number of plan targets, a single plan for product purchases should be considered sufficient. Other indicators, including the output volume of types of products, the structure of sowing, the livestock population and productivity, crop yields, forms of labor organization, questions of the social development of rural areas, should be worked out by the farm leaders and specialists themselves.

An article by a professor of economics in *Kommunist* (December 18, 1980) characterized as a "flaw in management", the process whereby district administrators plan how much and what to sow, the expenditure per hectare, etc., instead of leaving these decisions to local organs.

Finally, at the 26th Party Congress, Brezhnev cited the work of agricultural cooperatives and enterprises in Hungary and experiments with agro-industrial cooperation in Bulgaria as models for further study and wider use by the Communist Party of the Soviet Union. Because Hungarian farm managers have considerable control over the planning process, a continued movement towards further decentralization in Soviet farming can also be expected. (Yuri Markish, Anton Malish)

THE ELEVENTH FIVE-YEAR PLAN (1981-85)

The draft guidelines for the Eleventh 5-Year Plan are modest in scope for the agricultural sector, as compared to the more ambitious goals established for the three previous 5-Year Plans.³⁶ Gross agricultural output during 1981-85 is planned to grow to an annual average of 138-141 billion rubles or by 12-14 percent above the reduced level during 1976-80. By contrast, the Tenth 5-Year Plan called for agricultural output to grow by 14-17 percent in value over that reached in 1971-75, but only a 9 percent increase was obtained.

Inputs into the agricultural sector have been trimmed to more realistic levels. Total capital investments during 1981-85 are planned at about 195 billion rubles. Agriculture's share of total capital investments in the national economy is to remain at 27 percent. Planned deliveries of tractors, trucks, grain combines to agriculture during 1981-85 call for 70,000 more tractors, 110,000 more trucks, and 61,000 more grain combines. During 1976-80, the plan called for increases of 233,000 tractors, 248,000 trucks, and 89,000 grain combines.

The Soviets seem to be deemphasizing quantities, probably in hopes of producing higher quality agricultural machinery with better spare parts support.

In the past 3 years, the Soviets failed to meet plans for irrigation and drainage of new lands for agricultural production. The 1981-85 plans have been trimmed sharply below the 1976-80 planned levels and also below actual performance during 1976-80. The 1981-85 plan calls for 3.4-3.6 million hectares of newly irrigated land and 3.7-3.9 million hectares of newly drained land to be brought into agricultural production.

Mineral fertilizer production is planned to reach 150-155 million tons in 1985. This is an ambitious goal of 46-50 million tons more than produced in 1980—when production gained by only 14 million tons over 1975. Although the Soviets propose accelerated exploration for fertilizer raw materials and new production facilities, the inherent problem in the chemical fertilizer industry and the U.S. suspension of sales of needed superphosphates to the USSR seems to put the production target, which is a key element in achieving higher yield capacity, out of reach.

Planned deliveries of 115 million tons of mineral fertilizers (excluding 5 million tons of feed additives) to agriculture also appears unlikely. Even if production targets were met, achievement of this goal would require substantial improvement in the handling, transportation, and delivery of fertilizers to farms and other agricultural enterprises.

Phosphate fertilizer application is especially critical. The decision to exploit and expand domestic phosphate resources, primarily in Kazakhstan, will require long-range planning and development. The apparent reluctance to convert the Occidental-built SPA-based plants, suggest the Soviets are expecting large imports of this key ingredient to be resumed.

The 1981-85 annual average plan for grain production has been set at 238-243 million tons, up 8-10 percent from 1976-80 average annual goal and 16-18 percent above actual average output for this same period. Achievement of the goal would require 5 years of record yields; however, based on past performance and the wide climate-induced year-to-year variations in output, this appears highly unlikely.

Production of hay, silage, and haylage are planned to reach 80 million tons, 274 million tons, and 77 million tons, respectively, in 1985.³⁷ Based on production of these fodder crops as of early October 1980 (see page 5), these goals appear ambitious. Considerable attention is being devoted to improving fodder production; ensuring farms' fodder self-sufficiency; reducing losses in nutrient value during harvesting and storage; and building more

³⁶ At the 26th Party Congress (February 1981) General Secretary Brezhnev noted: "The party has always regarded the plan as law because only its observance ensures the smooth operation of the national economy . . . The practice of downward adjustment of plans has become widespread. This practice disorganizes the economy . . . The plan should unquestionably be realistic, balanced, but equally unquestionably it must be fulfilled." Proceedings of the 26 CPSU Congress, Volume 1, FBIS *Daily Report, Soviet Union*, February 24, 1981, p. 33.

³⁷ *Pravda*, December 17, 1980.

storage facilities for silage, hay, haylage, grass meal, root crops, and other fodders. How well the Soviets succeed in providing a balanced fodder production base will be a major element in achieving livestock product goals.

The 1981-85 average-annual-output plan for meat production has been set at 17-17.5 million tons, up 15-18 percent above average output in 1976-80. Output in 1985 is to amount to 18.2 million tons, a downward revision from the original target of 19.5 million tons. In either instance, attainment of these goals appears out of reach unless dramatic improvements take place in domestic feed availabilities and feed efficiency—prospects of which do not appear very likely in the foreseeable future. In the same vein, the plan for milk to reach an annual average output of 97-99 million tons (a 5-7 percent increase over average output in 1976-80) also appears unlikely. Milk yields per cow in the past 4 years have declined. Significant improvements in supply of roughages and other inputs are necessary to meet established goals.

With the emphasis on the poultry sector in recent years and the continuing upswing in egg production, it is very likely that the 1981-85 plan for an annual average output of "no less than" 72 billion eggs will be met.

Wool production is to average 470,000-480,000 tons, 2-4 percent increase over 1976-80 average output. Fulfillment of this goal is not likely.

The 1981-85 plan calls for average annual output of sugarbeets to reach 100-103 million tons, up 13-16 percent over the 1976-80 average. Sugarbeet area has stabilized at about 3.7 million hectares in recent years, with little likelihood of much or any expansion in the current 5-year period. This, together with past performance, would deem it unlikely that the planned average production goal will be reached. However, it is possible that the 1976-80 average sugarbeet output of 88.5 million tons could be improved somewhat.

Cotton is planned to reach an average annual output of 9.2-9.3 million tons—a 3-4 percent increase above average output during 1976-80. Based on the upward trend in cotton production in the past several years, an expected increase in the cotton area of roughly 250,000 hectares, and assuming favorable weather and adequate water supplies, fulfilling and possibly exceeding the 1981-85 average plan should not prove a difficult task.

Annual average output of sunflowerseed during the current 5-Year Plan is planned at 6.8 million tons, a 28 percent increase over average output during 1976-80. Based on past performance and the inherent problems existing in Soviet sunflowerseed production, it is unlikely that this ambitious goal will be met.

Vegetable production is planned to reach an annual average level of 29.4 million tons, over 3 million tons or 13 percent more than average output during 1976-80. Similarly, output of fruit and berries (excluding grapes) are planned at an annual average of 11.5 million tons versus average output of 9.4 million tons in 1976-80. With the creation of the new Ministry for Vegetables and Fruits, some improvement in production and distribution of vegetables and fruit is foreseen in the next 5 years.

During the new plan period, some improvement in Soviet weather conditions can probably be assumed since 3 of the last 5 years (1977, 1979, and 1980) were especially unfavorable. Assuming better weather, most Soviet agricultural targets appear more reasonable and realistic, although many of the bottlenecks identified here—higher costs of raw materials and fuels, the need to improve feeding efficiency, slower rates of land improvement, continued problems in the fertilizer industry, and an outward migration and aging of the rural labor force—seem susceptible only to long-run solutions extending perhaps beyond 1985. Still, the targets for grain and meat appear overly optimistic. (Yuri Markish, Angel Byrne)

1981 OUTLOOK

The value of gross agricultural production in 1981 is planned to reach 135.4 billion rubles, slightly less than the 136 billion rubles planned for last year. If the goal is reached, it would represent a 12-percent increase over 1980 actual performance. Nevertheless, the Soviets have been unable to meet agricultural production goals since at least 1976.

Grain production is targeted for 236 million tons in 1981, a million tons more than was planned in 1980. Winter grains were sown on 34 million hectares, about 8 percent short of the planned area. Last year's late harvest probably had an adverse effect on efforts to improve soil fertility. Reports indicate that not all farms have acquired the desired assortment of high quality seed.

In general, the 1980/81 winter has been unusually mild in almost all parts of the USSR; the last such mild winter occurred in 1957-58. Ice crusts were reported in the northern areas of European USSR, but except for one article focusing on the Leningrad area, the Soviet press has

not expressed concern about possible crop damage. Soil moisture was more than adequate over most of the winter grain belt. However, in the New Lands, additional precipitation is needed before spring planting begins. On balance, these developments are probably enough to prevent the record yields needed to reach the 1981 target.

The production of forage crops, mixed feeds, chemical feed additives, vitamins, and antibiotics, etc. will be important sectors to watch, partly because their output will affect the level of grain imports, and also because improving the quantity as well as the quality of feed rations plays a key role in meat output. This year's targets are 67 million tons for hay and 243 million tons for silage. The targets are well above 1979 or 1980 levels, and it remains to be seen how responsive Soviet agriculture can be to new programs designed to create the balanced fodder-production base needed for livestock feeding.

Based on the upward trend in production, some expected area expansion and normal weather conditions, cotton output could well exceed the 1981 national goal of 9.3 million tons. A repeat of last year's extremely favorable cotton growing weather could produce the third consecutive year of record crops. At present, the chief concern is that abnormally warm weather and light snowfall in the mountains of Soviet Central Asia may cause a shortage of irrigation water for the 1981 crop.

Sunflowerseed production in 1981 is planned at 6.4 million tons, almost 17 percent below the 1980 plan. Despite a lowering in the sunflower production target, fulfillment is doubtful; in the last four years, average annual sunflowerseed output has totaled only 5.3 million tons. Total output in 1980 reached 4.65 million tons. Sunflowerseed production in the USSR has been stagnating for several years because of the lack of hybrid varieties and disease problems, which the Soviets cite as reasons for the significant lowering of production goals. As a result of the poor performance, the Soviets have had to boost soybean imports. This import dependence may be reflected in the lower goal for sunflowerseed production; the trend is likely to continue into the next few years.

Soviet efforts to raise and stabilize sugarbeet production have been plagued by weather problems, shortages of labor for field work, and difficulties in recovering the crop. For 1981, if weather conditions are good, a production level of 90-95 million tons is considered optimistic.

The potato crop fared the worst of all crops during 1980. This year, production is planned at 90 million tons. The January decree encouraging private-plot output might help stimulate potato production, but in any case, 90 million tons is well within levels of past performance, and likely to be attained with favorable weather.

Planned 1981 vegetable production is 28 million tons, and is below 1980 planned output. Actual vegetable output in 1980 amounted to 26 million tons and missed the target by 9 percent. The planned figure for 1981 will be very hard to meet, although the incentives to expand private plots, gardens, and kitchen-gardens could be helpful.

The 1981 plan for meat production calls for 16 million tons (slaughter weight), up only 2 percent above the 1980 revised plan but 6 percent above 1980 output. Along with grain output, the meat production goal is one of the most optimistic in the agricultural sector. With prospects of another tight feed situation in 1981, a potato shortage, and questionable fodder supplies, it is possible that further adjustments in livestock numbers will take place in the first half of 1981. These adjustments may temporarily improve meat supplies. After June, assuming normal weather, grain and feed supplies could improve and allow

modest gains in the average weights of livestock sent to slaughter. The mild 1980-81 winter already has helped conserve feed supplies to some extent. Therefore, it is probable that 1981 meat output could reach about the 1980 level of 15.1 million tons and possibly exceed it by a small margin. On the other hand, if the Soviets elect to maintain livestock inventories at any cost, meat output could drop below the 1980 level. These two scenarios suggest meat output in the range of 14.8-15.3 million tons. It is unlikely that the Soviets would accept two consecutive years of declining meat output and resultant shortages. Thus, they will probably take any measure to maintain 1981 output at least at the 1980 level. The new decree on private-plot production is a good example of the type of action that would likely be involved in improving feed efficiency and in expanding meat output.

The 1981 plan for milk production called for 95 million tons, the same as the revised 1980 plan. The USSR went into 1981 with record cow inventories. Despite large cow inventories, milk yields have declined in the past 4 years—from poor roughage availabilities or from other inherent problems. Unless conditions improve significantly, it is likely that 1981 milk output will show some decline from 1980's output of 91 million tons.

The 69.3 billion eggs planned for this year is 2.5 percent above the revised-upward 1980 plan. With the upward trend in egg production in the past several years and preferential treatment for the poultry sector, as indicated in 1980, fulfillment of the 1981 goal is foreseen.

The plan for wool, set at a modest 472,000 tons and slightly lower than the revised 1980 plan, probably will not be met.

The likely plan shortfalls in the three key areas of grain, oilseeds, and meat have important international implications. In 1981, the Soviets will probably again import massive amounts of grain as they try to rebuild stocks and sustain livestock herds. Their efforts at ration improvement dictate greatly expanded imports of corn and soybean meal. The Soviets have found other sources of supply in the short-run, but the United States remains the only reliable source for large scale exports of these commodities. Accordingly, the Soviets probably view the approaching termination of the U.S.-USSR Grain Agreement—and the related prospect of the suspension denying them complete access to U.S. commodities related to their feed-livestock economy—as a matter of critical economic interest. One can assume, therefore, that they will seek to arrive at an accommodation with the United States that would either permit an extension of the Grain Agreement, or lead to a resolution of the U.S. sales suspension. (Anton Malish, Angel Byrne)

POSTSCRIPT

On April 24, 1981, the President announced his decision to terminate the U.S. sales suspension on agricultural commodities and phosphates. The decision came after a full and complete study of the sales suspension which began as soon as President Reagan took office, and which took into account national security, foreign policy and agricultural needs.

Table 1--Area, yield, and production of grain, USSR, 5-year averages, and 1971-79 annual

Year	Wheat			Rye	Barley	Oats	Corn	Other	Total
	Winter	Spring	Total						
								1/	grain
	1,000 hectares								
Area:									
1966-70 average	18,280	48,894	67,174	11,505	20,331	8,680	3,517	10,876	122,083
1971	20,694	43,341	64,035	9,507	21,566	9,632	3,332	9,865	117,937
1972	14,979	43,513	58,492	8,160	27,269	11,358	4,012	10,867	120,158
1973	18,340	44,815	63,155	7,012	29,387	11,887	4,031	11,266	126,738
1974	18,610	41,066	59,676	9,810	31,079	11,567	3,955	11,100	127,187
1975	19,593	42,392	61,985	8,010	32,547	12,107	2,652	10,619	127,921
Average	18,443	43,025	61,469	8,500	28,370	11,310	3,596	10,743	123,988
1976	17,248	42,219	59,467	9,035	34,261	11,269	3,303	10,425	127,760
1977	20,712	41,318	62,030	6,697	34,514	13,026	3,362	10,715	130,344
1978	23,122	39,776	62,898	7,719	32,690	12,097	2,535	10,526	128,465
1979	18,718	38,964	57,682	6,476	37,005	12,239	2,667	10,282	126,351
1980	22,553	38,920	61,473	8,638	31,574	11,768	2,977	10,158	126,588
Average	20,470	40,239	60,710	7,713	34,009	12,080	2,969	10,421	127,902
	Metric tons per hectare								
Yield: 2/									
1966-70 average	1.96	1.11	1.34	1.12	1.50	1.38	2.72	1.18	1.37
1971	2.31	1.18	1.54	1.35	1.60	1.52	2.58	1.20	1.54
1972	1.96	1.30	1.47	1.18	1.35	1.24	2.44	1.09	1.40
1973	2.70	1.35	1.74	1.53	1.87	1.47	3.28	1.44	1.76
1974	2.40	.95	1.40	1.55	1.74	1.32	3.05	1.35	1.54
1975	1.87	.70	1.07	1.13	1.10	1.03	2.74	.87	1.09
Average	2.26	1.10	1.45	1.36	1.53	1.31	2.82	1.19	1.47
1976	2.59	1.24	1.63	1.55	2.03	1.61	3.06	1.45	1.75
1977	2.51	.97	1.48	1.27	1.53	1.41	3.26	1.24	1.50
1978	2.98	1.31	1.92	1.76	1.90	1.53	3.53	1.26	1.85
1979	2.05	1.33	1.56	1.26	1.30	1.24	3.13	.89	1.42
1980	2.20	1.25	1.60	1.18	1.38	1.27	3.26	1.25	1.49
Average	2.47	1.22	1.64	1.41	1.62	1.41	3.24	1.22	1.60
	1,000 metric tons								
Production:									
1966-70 average	35,888	54,304	90,192	12,834	30,454	11,938	9,558	12,785	167,562
1971	47,787	50,973	98,760	12,787	34,571	14,650	8,597	11,810	181,175
1972	29,380	56,613	85,993	9,633	36,813	14,095	9,830	11,874	168,238
1973	49,435	60,349	109,784	10,759	55,044	17,516	13,216	16,211	222,530
1974	44,698	39,215	83,913	15,223	54,208	15,302	12,104	14,958	195,708
1975	36,651	29,573	66,224	9,064	35,808	12,495	7,328	9,199	140,118
Average	41,590	47,345	88,935	11,493	43,289	14,812	10,215	12,810	181,554
1976	44,594	52,288	96,882	13,991	69,539	18,113	10,138	15,092	223,755
1977	51,971	40,190	92,161	8,480	52,687	18,407	10,979	13,013	195,727
1978	68,829	52,107	120,936	13,612	62,118	18,578	8,898	13,248	237,390
1979	38,417	51,790	90,207	8,113	47,954	15,162	8,373	9,367	179,176
1980	3/49,600	3/48,500	4/98,100	4/10,200	3/43,500	3/15,000	4/9,700	3/12,700	4/189,200
Average 3/	50,682	48,975	99,657	10,879	55,159	17,051	9,620	12,677	205,050

1/ Includes millet, buckwheat, rice, pulses, and miscellaneous grains.

2/ Calculated from area and production data when official yield data are not available.

3/ Estimate.

4/ Preliminary.

[illegible]

NA = Not available.

1/ Preliminary.

Table 4--Total supply and estimated utilization of grain, USSR, 1956/57-1980/81 1/

Year beginning July 1	Pro- duction : 2/	Trade		Net 3/	Avail- ability : 4/	Seed : 5/	Indus- trial : 6/	Utilization				Feed : 10/	Total : 11/	Stock change 12/
		Imports : 7/	Exports : 8/					Food : 9/	Dockage- waste : 10/					
-- Million metric tons --														
1956/57	125.0	0.9	5.4	-4.5	120	18	3	42	12	33	108			+12
1957/58	102.6	1.5	6.2	-4.7	98	18	3	43	10	34	109			+11
1958/59	134.7	1.7	7.7	-6.0	129	18	3	43	12	39	117			+12
1959/60	119.5	1.0	6.8	-5.8	114	18	3	43	12	40	116			-2
1960/61	125.5	0.8	7.0	-6.2	119	20	3	42	13	41	118			+1
1961/62	130.8	0.8	8.4	-7.6	123	21	3	44	13	45	126			-3
1962/63	140.2	0.6	8.3	-7.7	133	23	2	48	14	43	130			+2
1963/64	107.5	10.4	4.7	+5.7	113	23	2	47	5	32	110			+3
1964/65	152.1	2.6	4.3	-1.7	150	22	3	45	17	44	130			+20
1965/66	121.1	9.0	5.3	+3.7	125	24	3	44	12	56	139			-14
1966/67	171.2	3.9	5.3	-1.4	170	24	3	44	14	60	144			+26
1967/68	147.9	2.3	6.4	-4.1	144	24	3	44	12	64	146			-2
1968/69	169.5	1.2	7.4	-6.2	163	25	3	44	17	72	160			+3
1969/70	162.4	1.8	7.6	-5.8	157	23	3	45	23	83	177			-20
1970/71	186.8	1.3	8.5	-7.2	180	25	3	45	22	92	188			-8
1971/72	181.2	8.3	6.9	+1.4	183	27	3	45	13	93	181			+2
1972/73	168.2	22.8	1.8	+21.0	189	26	3	45	15	98	187			+2
1973/74	222.5	11.3	6.1	+5.2	228	27	3	45	33	105	214			+14
1974/75	195.7	5.7	5.3	+0.4	196	28	3	45	23	107	206			-10
1975/76	140.1	26.1	0.7	+25.4	166	28	3	45	14	89	180			-14
1976/77	223.8	11.0	3.3	+7.7	232	29	3	45	31	112	221			+11
1977/78	195.7	18.9	2.3	+16.8	213	28	4	45	29	122	228			-16
1978/79 5/	237.4	15.6	2.8	+12.8	250	28	4	46	28	125	231			+19
1979/80 5/	179.2	31.0	0.8	+30.2	209	28	4	46	22	126	225			-16
1980/81 6/	189.2	35.0	1.0	+34.0	223	28	4	47	28	118	225			-2

1/ Rounded to the nearest million tons, except for production and trade data. Thus, totals may not add due to rounding. 2/ Calendar year basis. 3/ Minus indicates net exports or drawdown of stocks. 4/ Difference between availability and estimated total utilization. 5/ Preliminary for trade, availability, utilization, and stock change. 6/ Forecast.

Table 5--Total supply and estimated utilization of wheat and coarse grains, USSR, 1971/72-1980/81 1/

Year	Pro-	Trade	Net 3/	Avail-	Seed	Indus-	Food	Waste	Feed	Total	Stock
beginning	duction	Exports	Imports	ability	trial	trial	Food	waste	Feed	Total	change
July 1	2/	:	:	:	:	:	:	:	:	:	3/ 4/
-- Million metric tons --											
Wheat											
1971/72	98.8	3.5	5.8	-2.3	97	15	1	35	7	36	94 +3
1972/73	86.0	15.6	1.3	+14.3	100	14	1	35	8	41	98 +2
1973/74	109.8	4.5	5.0	-0.5	109	14	1	34	16	30	96 +13
1974/75	83.9	2.5	4.0	-1.5	82	14	1	34	10	34	93 -11
1975/76	66.2	10.1	0.5	+9.6	76	15	1	35	7	30	87 -11
1976/77	96.9	4.6	1.0	+3.6	100	15	1	35	14	28	92 +8
1977/78	92.2	6.6	1.0	+5.6	98	15	1	35	14	44	108 -10
1978/79	120.8	5.1	1.5	+3.6	125	14	1	35	14	43	107 +18
1979/80 5/	90.2	12.0	0.5	+11.4	102	15	1	35	11	54	116 -14
1980/81 6/	98.1	16.5	0.8	+13.0	114	15	1	36	15	50	116 -2
Coarse grains 7/											
1971/72	72.6	4.3	0.9	+3.4	76	10	2	7	5	51	76 0
1972/73	72.5	6.9	0.4	+6.5	79	11	2	7	7	53	79 0
1973/74	101.0	6.4	0.9	+5.5	106	11	2	7	15	70	105 +1
1974/75	99.7	2.7	1.0	+1.7	101	11	2	7	12	68	100 +1
1975/76	65.8	15.6	0	+15.6	81	12	2	7	7	56	84 -3
1976/77	115.0	5.7	2.0	+3.7	119	12	3	7	16	78	116 +3
1977/78	92.6	11.7	1.0	+10.7	103	11	3	7	14	74	109 -5
1978/79	105.0	10.0	1.0	+9.0	114	12	3	7	13	79	113 +1
1979/80 5/	81.3	18.4	0	+18.4	100	12	3	7	10	70	102 -2
1980/81 6/	81.0	17.5	0	+17.5	98	12	3	7	12	64	98 0

1/ Rounded to the nearest million tons, except for production and trade data. Thus, totals may not add due to rounding.

2/ Calendar year basis.

3/ Minus indicates net exports or drawdown of stocks.

4/ Difference between availability and estimated total utilization.

5/ Preliminary.

6/ Forecast.

7/ Includes rye, barley, oats, corn, and millet.

Table 6--January 1 livestock numbers and animal units in terms of cows, USSR,
1955, 1960-82

Year	Cattle		Hogs		Sheep	Goats	Horses	Poultry	Total animal units
	Total	Cows 1/	Total	Sows					2/
-- Million head --									
1955	56.7	26.4	31.0	NA	99.0	14.0	14.1	3/375.0	3/86.8
1960	74.2	33.9	53.4	4.22	136.1	7.9	11.0	514.3	109.8
1961	75.8	34.8	58.7	4.70	133.0	7.3	9.9	515.6	111.3
1962	82.1	36.3	66.7	NA	137.5	7.0	9.4	542.6	118.5
1963	87.0	38.0	70.0	NA	139.7	6.7	9.1	550.4	123.1
1964	85.4	38.3	40.9	NA	133.9	5.7	8.5	449.1	110.2
1965	87.1	38.8	52.8	NA	125.2	5.4	7.9	456.2	113.7
1966	93.4	39.3	59.6	4.11	129.8	5.5	8.0	490.7	121.0
1967	97.1	40.2	58.0	3.81	135.5	5.5	8.0	516.3	124.2
1968	97.2	40.4	50.9	3.36	138.4	5.5	8.0	528.4	122.7
1969	95.7	40.1	49.0	3.30	140.6	5.6	8.0	546.9	121.7
1970	95.2	39.4	56.1	3.62	130.7	5.1	7.5	590.3	122.6
1971	99.2	39.8	67.5	4.04	138.0	5.4	7.4	652.7	130.5
1972	102.4	40.0	71.4	4.02	139.9	5.4	7.3	686.5	134.4
1973	104.0	40.6	66.6	3.95	139.1	5.6	7.1	700.0	134.1
1974	106.3	41.4	70.0	4.03	142.6	5.9	6.8	747.7	138.0
1975	109.1	41.9	72.3	4.02	145.3	5.9	6.8	792.4	141.6
1976	111.0	41.9	57.9	3.71	141.4	5.7	6.4	734.4	136.5
1977	110.3	42.0	63.1	3.76	139.8	5.5	6.0	796.0	138.4
1978	112.7	42.6	70.5	4.04	141.0	5.6	5.8	882.3	143.9
1979	114.1	43.0	73.5	4.17	142.6	5.5	5.7	946.9	147.0
1980	115.1	43.3	73.9	4.28	143.6	5.8	5.6	980.9	148.7
1981	115.5	43.4	73.5	4.05	3/141.5	3/5.5	3/5.3	3/1,000	148.8
1982 3/	116.5	43.7	73.5	NA	NA	NA	5.3	1,000	NA

NA = Not available.

1/ Revised series beginning 1966; excludes cows placed on feed for slaughter.

2/ In terms of cows. Conversion ratios as follows: Cattle (other than cows) .6; hogs .3; total sheep and goats .1; horses 1.0; and poultry .02.

3/ Estimate.

Table 7--USSR livestock and poultry numbers on state and collective farms by first of month,
1975-81

Year and Category	:	:	:	:	:	:	:	:	:	:	:	:	:
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
	:	:	:	:	:	:	:	:	:	:	:	:	
	:	-- <u>Million head</u> --											
	:	:	:	:	:	:	:	:	:	:	:	:	
Cattle	:	:	:	:	:	:	:	:	:	:	:	:	
1975	:	80.9	81.0	82.2	83.9	86.0	87.0	86.5	86.6	85.8	84.6	83.9	83.4
1976	:	83.8	82.9	83.7	85.3	87.1	87.8	87.7	87.6	86.7	85.0	84.2	83.5
1977	:	83.4	85.0	86.0	87.6	89.7	90.6	90.2	89.8	88.9	87.1	86.3	86.2
1978	:	86.6	86.8	88.1	89.9	91.7	92.5	91.8	91.6	90.8	89.2	88.6	88.2
1979	:	88.0	88.2	89.2	91.1	93.0	93.7	92.9	92.3	91.4	90.1	89.3	88.9
1980	:	89.0	88.9	89.6	91.6	93.4	94.0	93.5	93.1	92.2	90.8	90.0	89.6
1981	:	NA	89.4	90.0									
	:	:	:	:	:	:	:	:	:	:	:	:	:
Cows	:	:	:	:	:	:	:	:	:	:	:	:	:
1975	:	26.9	26.8	26.8	27.0	27.2	27.4	27.5	27.5	27.4	27.3	27.3	27.3
1976	:	27.4	27.2	27.2	27.4	27.5	27.7	27.8	27.7	27.7	27.6	27.5	27.6
1977	:	27.8	28.1	28.1	28.3	28.5	28.7	28.8	28.8	28.7	28.7	28.6	28.7
1978	:	28.9	28.8	28.8	29.0	29.2	29.3	29.3	29.3	29.3	29.2	29.1	29.2
1979	:	29.4	29.3	29.2	29.4	29.6	29.7	29.7	29.6	29.6	29.5	29.4	29.4
1980	:	29.8	29.5	29.5	29.6	29.7	29.8	29.9	29.9	29.8	29.7	29.6	29.6
1981	:	NA	29.6	29.6									
	:	:	:	:	:	:	:	:	:	:	:	:	:
Hogs	:	:	:	:	:	:	:	:	:	:	:	:	:
1975	:	53.6	53.5	53.2	52.3	53.6	55.2	55.6	56.8	54.3	49.6	46.4	43.9
1976	:	41.9	41.2	41.2	41.8	43.8	45.6	45.5	48.3	49.2	49.3	48.8	47.7
1977	:	47.3	48.6	49.1	49.1	50.2	51.4	52.8	54.7	55.5	54.9	54.2	53.4
1978	:	52.4	53.0	53.6	53.7	54.6	55.9	56.5	58.3	59.0	58.4	57.7	56.5
1979	:	54.9	55.0	55.1	54.9	55.6	56.6	57.0	58.2	58.5	58.5	57.5	56.0
1980	:	55.2	54.9	54.3	54.4	55.0	55.6	56.0	58.0	58.2	58.2	57.7	56.6
1981	:	NA	55.4	55.2									
	:	:	:	:	:	:	:	:	:	:	:	:	:
Poultry	:	:	:	:	:	:	:	:	:	:	:	:	:
1975	:	401.8	404.9	444.3	498.8	547.4	577.2	573.3	547.3	483.5	418.8	376.2	361.8
1976	:	396.6	368.6	395.9	433.4	476.3	504.0	506.1	500.9	481.6	459.3	444.4	434.9
1977	:	437.7	442.9	470.1	513.2	564.6	598.0	597.0	594.9	572.5	540.5	518.5	503.9
1978	:	497.3	496.5	528.8	575.2	625.9	650.1	644.4	644.3	623.3	595.1	573.1	555.0
1979	:	549.7	543.9	568.1	617.5	671.5	695.7	685.2	685.5	666.6	635.3	616.1	593.4
1980	:	592.0	586.0	606.0	642.8	688.0	708.9	704.0	707.6	697.8	675.0	655.5	634.8
1981	:	NA	624.1	651.3									
	:	:	:	:	:	:	:	:	:	:	:	:	:
Sheep and goats	:	:	:	:	:	:	:	:	:	:	:	:	:
1975	:	116.8	119.6	125.3	136.1	149.6	151.7	146.8	142.2	135.4	127.4	120.7	116.5
1976	:	115.4	117.7	122.5	131.9	143.1	144.4	140.3	136.8	131.0	122.7	117.8	115.2
1977	:	114.4	117.8	124.3	135.1	147.2	149.2	144.7	140.6	133.6	124.6	119.1	116.4
1978	:	115.6	118.8	125.8	137.2	149.4	150.2	145.5	142.4	136.2	127.1	121.2	118.2
1979	:	116.6	120.0	126.2	139.7	151.0	150.9	146.3	142.3	136.0	127.3	121.6	118.6
1980	:	117.4	119.8	126.5	137.8	148.4	148.8	143.9	140.2	133.8	125.3	119.5	116.7
1981	:	NA	117.7	124.4									
	:	:	:	:	:	:	:	:	:	:	:	:	:

NA = Not available.

Table 8--Livestock numbers and animal units as of January 1, 1980, by republic, USSR

Republic	Cattle	Cows	Hogs	Sheep	Goats	Poultry	Animal units 1/
	----- Thousand head -----			-- Million head --			
USSR total	115,100	43,310	73,898	143,599	5,824	980.9	143.1
Russian Federation	58,637	22,245	36,368	64,005	2,865	539.2	72.5
Ukraine	25,552	9,289	20,149	8,952	233	221.9	30.4
Belorussia	6,735	2,748	4,437	540	24	37.2	7.2
Uzbekistan	3,414	1,305	423	8,006	644	22.2	4.1
Kazakhstan	8,337	2,908	3,105	34,405	662	47.5	11.6
Georgia	1,556	611	951	1,947	94	18.2	2.0
Azerbaidzhan	1,769	664	188	5,117	189	17.5	2.3
Lithuania	2,172	868	2,595	58	3	13.6	2.7
Moldavia	1,150	429	2,079	1,207	19	15.3	1.9
Latvia	1,424	580	1,698	207	6	10.8	1.8
Kirgizia	965	375	326	9,922	221	9.6	2.0
Tadzhikistan	1,184	442	130	2,454	627	5.9	1.4
Armenia	773	302	237	2,282	41	10.2	1.1
Turkmenistan	610	228	160	4,348	195	5.4	1.1
Estonia	822	316	1,052	149	1	6.4	1.1

1/ In terms of cows. Conversion ratios as follows: cattle (other than cows) .6; hogs .3; total sheep and goats .1; and poultry .02; excludes horses.

Table 9--Production of principal livestock products, USSR, 5-year averages, and 1966-80 annual

Year	Meat						Milk	Wool <u>2/</u>	Eggs	
	Total	Beef	Pork <u>1/</u>	Mutton,	Poultry	Other				
		and veal		lamb, and goat						
-----1,000 metric tons-----										Millions
1966	: 10,704	4,377	4,465	933	745	184	75,992	371	31,672	
1967	: 11,515	5,081	4,456	1,028	764	186	79,920	394	33,921	
1968	: 11,648	5,513	4,079	1,029	817	210	82,295	415	35,679	
1969	: 11,770	5,569	4,094	969	866	272	81,540	390	37,190	
1970	: 12,278	5,393	4,543	1,002	1,071	269	83,016	419	40,740	
Average	: 11,583	5,187	4,327	992	853	224	80,553	398	35,840	
1971	: 13,272	5,536	5,277	996	1,183	280	83,183	429	45,100	
1972	: 13,633	5,722	5,445	923	1,237	306	83,181	420	47,910	
1973	: 13,527	5,873	5,081	954	1,295	324	88,300	433	51,154	
1974	: 14,620	6,384	5,515	974	1,420	327	91,760	462	55,509	
1975	: 14,968	6,409	5,651	1,014	1,539	355	90,804	467	57,463	
Average	: 14,004	5,985	5,394	972	1,335	318	87,446	442	51,427	
1976	: 13,583	6,615	4,343	885	1,411	329	89,675	436	56,187	
1977	: 14,722	6,888	4,950	894	1,691	299	94,929	459	61,194	
1978	: 15,501	7,086	5,302	921	1,902	290	94,677	467	64,517	
1979	: 15,481	7,029	5,289	870	2,017	276	93,341	472	65,585	
1980 <u>3/</u>	: 15,100	6,800	5,000	900	2,100	300	90,700	462	67,700	
Average <u>3/</u>	: 14,877	6,884	4,977	894	1,824	299	92,664	459	63,037	

1/ Including fat.2/ Greasy basis.3/ Preliminary.

Table 10--Government procurements of livestock products, USSR,
5-year averages, annual, 1971-80 and 1981 plan

Year	:	Total meat 1/		:	Milk	:	:	:
	:	Live	Carcass	:	and milk	:	Eggs	Wool 2/
	:	weight	weight	:	products	:	:	:
	:	----- 1,000 tons -----		:		:	Millions	1,000 tons
1961-65 average	:	8,554	5,246	:	31,232	:	8,665	369
1966-70 average	:	11,610	7,318	:	43,197	:	14,404	412
1971	:	14,163	9,203	:	47,078	:	21,570	457
1972	:	15,023	9,712	:	48,443	:	24,299	452
1973	:	14,695	9,471	:	52,978	:	27,544	470
1974	:	16,187	10,474	:	55,768	:	30,892	507
1975	:	16,765	10,861	:	56,296	:	33,065	511
Average	:	15,367	9,944	:	52,113	:	27,474	479
1976	:	15,108	9,307	:	56,220	:	32,897	481
1977	:	16,286	10,186	:	60,762	:	36,831	512
1978	:	17,034	10,588	:	60,368	:	39,288	528
1979	:	16,692	10,430	:	58,954	:	41,050	538
1980	:	15,900	9,900	:	57,300	:	43,100	NA
Average	:	16,204	10,082	:	58,721	:	38,633	NA
1981 Plan	:	17,600	NA	:	61,000	:	43,100	528
1982	:			:		:		
1983	:			:		:		
1984	:			:		:		
1985	:			:		:		
Average	:			:		:		

NA = Not available.

1/ Livestock and poultry.

2/ Greasy basis.

Table 11--USSR consumption norms of selected food products and per capita consumption, selected years 1950-80 plan

Year	: Meat : Fish and : Milk and :		: Eggs : Sugar :Vegetable: Potatoes : Grain : :		:Vegetables: Fruits					
	: and : fish :	: milk :	: oil :	: 2/ :	: and : :	: berries				
	: fat : products :	products 1/:			melons :					
	----- Kilograms -----		----- Kilograms -----		----- Kilograms -----					
	Number		Number		Number					
Consumption norm 3/	: 82	18.6	405	292	40.0	9.1	97	110	146	113
1950	: 26	7.0	172	60	11.6	2.7	241	172	51	11
1960	: 40	9.9	240	118	28.0	5.3	143	164	70	22
1970	: 48	15.4	307	159	38.8	6.8	130	149	82	35
1966-70 average	: 47	14.3	287	144	37.2	6.5	132	150	78	NA
1971	: 50	14.8	300	174	39.5	7.0	128	147	85	39
1972	: 52	15.1	296	185	38.8	7.0	121	145	80	36
1973	: 53	16.1	307	195	40.8	7.3	122	143	85	41
1974	: 55	16.5	316	205	41.0	7.9	121	142	87	37
1975	: 57	16.8	315	216	40.9	7.6	120	141	89	39
Average	: 53	15.9	307	195	40.2	7.4	122	144	85	38
1976	: 56	18.4	316	209	41.9	7.7	119	141	86	39
1977	: 56	17.1	321	222	42.4	8.1	120	139	88	41
1978	: 57	17.1	318	232	42.8	8.3	117	140	92	41
1979	: 58	16.4	319	233	42.8	8.4	119	139	95	38
1980 plan	: 63	20.9	335	225	50.0	9.0	115	144	113	44
Average	:									
:	:									

NA = Not available.

1/ Including milk equivalent of butter.

2/ Flour equivalent.

3/ Consumption norm is the level of consumption recommended by the Institute of Nutrition, Academy of Sciences, USSR.

Table 12--Trade in meat and meat products, USSR, 5-year average, 1971-80 annual

Commodity	1966-70 : average	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
-- 1,000 metric tons --											
Imports											
Total meat & meat products	98	225	131	129	515	515	362	617	184	611	820
Fresh, frozen meat	74	203	85	89	472	454	284	559	136	527	NA
Red meat	43	116	40	46	396	406	226	438	84	386	NA
Poultry meat	31	87	45	43	76	48	58	121	52	141	NA
Canned meat 1/	23	29	77	77	75	60	61	75	62	150	NA
Canned meat with vegetables 1/	31	23	42	25	25	59	117	71	47	49	NA
Other	0	4	5	6	10	18	13	7	10	17	NA
Exports											
Total meat & meat products	115	35	60	75	56	44	41	33	39	34	NA
Fresh, frozen meat	97	11	37	47	27	18	8	8	10	6	NA
Red meat	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Poultry meat	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Canned meat 1/	15	62	56	64	65	58	75	63	70	68	NA
Canned meat with vegetables 1/	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Other	0	5	6	8	9	8	10	5	7	7	NA

NA = Not available.

1/ Millions of cans.

Source: Vneshnyaya trgovlya v SSSR, various issues.

Table 13--Area, yield, and production of selected nongrain crops, USSR, 5-year averages, and 1971-80 annual

Year	Seed cotton	Sugar- beets	Sun- flowers	Fiber flax	Potatoes	Vege- tables	Fruit, berries, grapes 1/	Tobacco 2/
	<u>1,000 hectares</u>							
Area:								
1966-70 average	2,527	3,582	4,837	1,341	8,238	1,440	2,625	144
1971	2,770	3,321	4,498	1,244	7,894	1,519	3,272	160
1972	2,735	3,486	4,394	1,251	7,960	1,578	3,264	169
1973	2,742	3,553	4,745	1,248	8,017	1,621	3,268	168
1974	2,880	3,610	4,686	1,210	7,983	1,635	3,339	172
1975	2,924	3,666	4,045	1,215	7,912	1,652	3,379	173
Average	2,810	3,527	4,474	1,234	7,953	1,601	3,304	168
1976	2,949	3,754	4,534	1,214	7,087	1,562	3,356	183
1977	2,992	3,761	4,574	1,209	7,067	1,567	3,370	182
1978	3,038	3,763	4,558	1,197	7,042	1,646	3,345	165
1979	3,090	3,739	4,334	1,046	6,966	1,654	3,326	170
1980 3/	3,147	3,710	4,353	1,116	6,936	1,715	NA	169
Average 3/	3,043	3,745	4,471	1,156	7,020	1,629	NA	174
	<u>Metric tons per hectare</u>							
Yield:								
1966-70 average	2.41	22.8	1.32	.34	11.5	13.2	3.7	1.44
1971	2.56	21.9	1.26	.39	11.7	13.2	3.8	1.44
1972	2.67	22.3	1.14	.36	9.8	12.2	2.9	1.64
1973	2.80	24.7	1.55	.35	13.5	15.5	4.1	1.64
1974	2.92	21.6	1.44	.33	10.1	14.1	3.7	1.70
1975	2.69	18.1	1.23	.41	11.2	13.5	4.2	1.67
Average	2.73	21.7	1.32	.37	11.3	13.7	3.8	1.62
1976	2.81	26.6	1.16	.42	12.0	15.2	4.5	1.66
1977	2.93	24.8	1.28	.40	11.8	14.6	4.5	1.66
1978	2.80	24.8	1.17	.32	12.2	16.1	4.3	1.66
1979	2.96	20.4	1.24	.30	13.0	15.6	4.9	1.74
1980 3/	3.17	21.5	1.07	NA	9.6	15.1	NA	1.66
Average 3/	2.93	23.6	1.19	NA	11.8	15.3	NA	1.67
	<u>1,000 metric tons</u>							
Production:								
1966-70 average	6,099	81,118	6,389	458	94,813	19,472	9,710	207
1971	7,101	72,185	5,663	486	92,655	20,840	12,370	232
1972	7,296	76,424	5,048	456	78,329	19,941	9,570	277
1973	7,664	87,047	7,385	443	108,200	25,927	13,351	275
1974	8,409	77,948	6,784	402	81,022	24,811	12,441	293
1975	7,864	66,314	4,990	493	88,703	23,351	14,235	290
Average	7,667	75,984	5,974	456	89,782	22,974	12,393	273
1976	8,278	99,872	5,277	509	85,102	24,991	15,260	303
1977	8,758	93,099	5,904	480	83,652	24,149	15,275	302
1978	8,500	93,488	5,333	376	86,124	27,902	14,374	274
1979	9,161	76,214	5,414	317	90,956	27,215	16,303	296
1980 3/	9,961	79,600	4,650	NA	66,900	25,900	15,000	280
Average 3/	8,932	88,454	5,316	NA	82,547	26,031	15,242	291

NA = not available.

1/ Bearing area.

2/ Excluding mahorka.

3/ Preliminary.

Table 14--Production, trade, and available supplies of cotton lint, USSR, crop years 1965/66-1980/81

Year beginning August 1	Procurements : of seed : cotton	Lint cotton : production	Imports 1/ :	Exports 1/ :	Net exports :	Supplies available : for : domestic utilization
			-- 1,000 metric tons --			
1965/66	5,662	1,917	176	487	310	1,607
1966/67	5,981	2,006	156	523	367	1,639
1967/68	5,970	2,021	140	546	406	1,615
1968/69	5,945	1,952	152	495	343	1,609
1969/70	5,708	1,956	221	490	269	1,687
1970/71	6,890	2,344	249	534	285	2,059
1971/72	7,101	2,347	198	608	410	1,937
1972/73	7,296	2,400	146	697	551	1,849
1973/74	7,664	2,401	136	734	598	1,803
1974/75	8,409	2,660	138	775	637	2,023
1975/76	7,864	2,528	125	846	721	1,807
1976/77	8,278	2,615	104	936	832	1,783
1977/78	8,758	2/2,768	77	906	829	1,939
1978/79	8,500	2/2,669	77	818	741	2/1,928
1979/80	9,161	2/2,858	2/70	2/850	2/780	2/2,078
1980/81	9,961	3/3,108	3/70	3/950	3/880	3/2,228
1981/82						
1982/83						
1983/84						
1984/85						

1/ Calendar year data converted to crop year basis.

2/ Estimate.

3/ Forecast.

Table 15--Production of cotton, wool, and linen yarn and cloth, USSR, 5-year averages, and 1971-80 annual

	Cotton		Wool		Linen		Other	
	Yarn	Cloth	Yarn	Cloth	Yarn	Cloth	cloth 1/	Total cloth
	1,000 tons	mil. sq. meters	1,000 tons	mil. sq. meters	1,000 tons	mil. sq. meters	mil. sq. meters	mil. sq. meters
1961-65 average	1,229	5,139	238	466	199	523	947	7,075
1966-70 average	1,398	6,019	303	581	242	658	1,182	8,440
1971	1,495	6,397	371	675	264	760	1,410	9,242
1972	1,504	6,421	377	681	264	775	1,507	9,384
1973	1,535	6,578	393	703	267	796	1,600	9,677
1974	1,557	6,624	408	724	267	796	1,689	9,833
1975	1,573	6,634	417	740	260	779	1,803	9,956
Average	1,533	6,531	393	705	264	781	1,601	9,618
1976	1,583	6,779	429	764	268	807	1,930	10,280
1977	1,597	6,811	437	773	269	817	2,006	10,407
1978	1,627	6,967	447	781	268	830	2,076	10,654
1979	1,623	6,977	450	774	245	768	2,136	10,655
1980	NA	NA	NA	NA	NA	NA	NA	10,700
Average								10,539

NA = Not available.

1/ Includes silk cloth and cloth made from hemp and jute fiber.

Source: Narodnoe Khozyaistvo, SSSR, various issues.

Table 16--Trade in cotton, wool, and linen yarn and cloth, USSR, 5-year averages, and 1971-80 annual

Category and Years	Cotton		Wool		Linen	
	Yarn	Cloth	Yarn	Cloth	Yarn	Cloth
	1,000 tons	million meters	1,000 tons	million meters	1,000 tons	million meters
<u>Imports</u>						
1961-65 average	9	81	1	18	NA	6
1966-70 average	18	123	13	12	NA	6
1971	21	152	18	15	NA	5
1972	23	168	21	17	NA	9
1973	21	148	12	15	NA	6
1974	18	146	10	16	NA	8
1975	30	181	10	19	NA	7
Average	23	159	14	16	NA	7
1976	29	184	11	15	NA	7
1977	35	190	11	14	NA	11
1978	32	186	7	13	NA	12
1979	20	168	7	12	NA	10
1980						
<u>Exports</u>						
1961-65 average	6	270	NA	.2	NA	2
1966-70 average	5	336	NA	.7	NA	5
1971	5	324	NA	.8	NA	3
1972	5	306	NA	1.0	NA	3
1973	5	254	NA	.9	NA	4
1974	3	172	NA	.9	NA	5
1975	2	248	NA	.9	NA	4
Average	4	261	NA	.9	NA	4
1976	1	244	NA	.8	NA	4
1977	1	234	NA	1.1	NA	5
1978	1	204	NA	1.8	NA	6
1979	1	161	NA	2.0	NA	6
1980						

NA = Not available.

Source: Vneshnyaya Torgovlya v SSSR, various issues.

Table 17--Vegetable oil production by type, USSR, 1955-80

Year	Total		Sunflower	Cotton	Linseed	Soybean	Castor	Mustard	Peanut	Hemp	Tung	Other
	All	Government										
	sources	1/ : sources										
-- 1,000 metric tons --												
1955	1,168	NA	519	397	27	81	20	7	67	3	1	48
1956	1,525	NA	936	344	41	79	13	12	47	2	1	50
1957	1,685	NA	1,016	396	88	78	4	14	36	5	2/	49
1958	1,465	NA	860	360	78	84	6	10	18	6	2/	42
1959	1,886	NA	1,279	381	58	96	9	10	10	4	1	37
1960	1,586	1,280	1,001	404	35	92	8	10	8	2	2/	25
1961	1,815	1,414	1,286	406	46	13	4	12	2	2	2/	43
1962	2,114	1,647	1,528	427	44	28	10	23	12	1	1	39
1963	2,195	1,695	1,613	432	29	48	7	20	10	1	2/	34
1964	2,249	1,749	1,587	496	28	47	17	20	11	1	2/	43
1965	2,770	2,207	2,108	502	48	29	22	18	4	3	1	35
1966	2,732	2,290	2,009	530	64	39	28	13	7	3	2/	40
1967	3,021	2,532	2,227	550	95	58	24	18	6	3	1	40
1968	3,145	2,664	2,384	531	73	62	29	21	8	2	1	35
1969	2,979	2,546	2,295	467	75	54	30	14	6	1	1	37
1970	2,784	2,344	2,146	495	43	33	24	10	5	1	2/	29
1971	2,923	2,628	2,133	608	49	63	21	17	1	1	1	30
1972	2,827	2,557	2,004	647	57	39	22	9	1	2/	1	48
1973	2,676	2,396	1,714	648	64	169	20	14	1	2/	1	47
1974	3,411	3,101	2,560	668	43	26	33	29	2	2/	2/	49
1975	3,344	3,059	2,471	737	20	22	30	23	2	NA	1	3/49
1976	2,775	2,566	1,637	714	26	323	23	15	1	NA	1	3/34
1977	2,943	2,757	1,777	697	23	367	17	22	NA	NA	1	3/38
1978	2,967	2,766	1,932	722	17	221	16	19	2	NA	2/	3/35
1979	2,819	2,622	1,852	637	10	253	15	24	2/	NA	2/	3/28
1980	4/2,645	4/2,500										

NA = Not available.

1/ Totals may not add because of rounding.

2/ Less than 500 tons.

3/ Includes 11,000 tons of corn oil.

4/ Preliminary.

Source: Maslo-Zhirovaya Promyshlennost', and Narodnoe Khozyaistvo, SSSR, various issues.

Table 19--USSR sugar production and trade, 5-year averages and 1961-80 annual

Year	Industrial production		Imports			
	Total	: of which : from beets	Raw		: Refined	: Exports : refined
			Total	: From Cuba		
-- 1,000 metric tons --						
1961	: 8,376	NA	3,345	3,345	232	414
1962	: 7,800	NA	2,233	2,233	232	792
1963	: 6,219	5,528	996	996	131	802
1964	: 8,208	7,032	1,859	1,859	7	348
1965	: 11,037	8,924	2,331	2,331	3	604
Average	: 8,328	NA	2,153	2,153	121	592
1966	: 9,740	8,295	1,841	1,841	2	993
1967	: 9,939	8,453	2,480	2,480	3	1,032
1968	: 10,766	9,030	1,752	1,749	3	1,300
1969	: 10,347	9,272	1,332	1,332	3	1,081
1970	: 10,221	8,139	3,003	3,003	0	1,079
Average	: 10,203	8,638	2,082	2,081	2	1,097
1971	: 9,025	7,805	1,536	1,536	3	1,002
1972	: 8,903	7,307	1,658	1,101	248	50
1973	: 10,714	8,449	2,485	1,603	137	43
1974	: 9,446	7,848	1,856	1,856	18	95
1975	: 10,382	7,445	3,236	2,964	4	53
Average	: 9,694	7,771	2,154	1,812	82	249
1976	: 9,249	6,162	3,343	3,068	383	73
1977	: 12,036	8,173	4,287	3,652	458	81
1978	: 12,209	8,605	3,990	3,797	3	162
1979	: 10,647	7,293	3,766	3,707	294	226
1980	: 10,100	1/6,700	1/3,750	1/2,750	1/920	1/150
Average	: 10,848	1/7,387	1/3,827	1/3,395	1/411	1/138

NA = Not available.

1/ Estimate.Source: Narodnoe Khozyaystvo, and Vneshnyaya Torgovlya, various issues.

Table 20--Soviet agricultural imports 1974-79, by value

Commodity	1974	1975	1976	1977	1978	1979
-- Million dollars 1/ --						
Animals for slaughter	112.6	190.0	101.1	115.8	76.5	134.7
Breeding animals	4.4	7.9	5.9	6.3	7.0	15.8
Meat and meat products	476.7	495.0	379.7	691.7	257.7	844.4
Milk and milk products	23.5	31.6	33.8	42.2	35.0	50.2
Egg and egg products	27.2	34.8	29.5	87.6	32.3	42.9
Grains	706.7	2,673.2	2,968.3	1,371.0	2,416.9	3,425.8
Wheat flour	51.9	92.6	88.0	102.6	66.0	172.5
Rice	69.4	101.0	102.3	129.6	153.3	216.8
Vegetables and potatoes	181.1	250.8	274.4	362.7	391.4	446.4
Fruits and berries, fresh	190.5	245.6	264.0	262.0	300.6	370.1
Dried fruit	51.5	67.7	48.4	87.6	83.4	131.6
Processed fruits and berries	57.2	104.9	99.8	112.2	125.3	136.0
Nuts	107.0	114.7	78.5	146.3	118.1	114.9
Sugar, raw	806.3	2,184.2	1,936.9	2,352.8	3,129.1	3,116.5
Sugar, refined	9.1	.8	134.7	111.8	1.5	60.6
Coffee, cocoa, tea	384.1	505.7	455.6	615.2	615.0	739.2
Spices	21.8	22.4	27.5	31.2	35.9	38.0
Alcoholic and non-alcoholic drinks	392.3	530.1	505.8	532.5	621.2	717.3
Tobacco, raw	143.0	226.2	212.0	233.8	224.1	246.5
Tobacco products	233.0	297.9	314.4	328.7	365.4	403.1
Furs	6.9	2.0	2.1	2.9	2.8	3.2
Raw hides	87.3	64.9	55.3	6.6	52.4	39.2
Oilseeds	38.8	129.3	454.3	390.3	270.8	542.2
Natural fibers	353.5	289.4	247.5	234.9	112.0	177.8
Wool	356.0	266.6	304.2	368.1	417.6	484.1
Animal fats including butter	10.2	12.1	10.5	67.9	47.0	216.4
Vegetable oils	36.2	54.8	58.3	83.1	83.5	146.4
Technical fats and oils	29.8	53.8	32.6	47.0	68.6	160.4
Seed and planting materials	86.9	86.3	105.1	193.1	128.6	120.8
Total agricultural imports	5,065.1	9,137.6	9,335.1	9,121.3	10,245.2	13,313.8

1/ Soviet official data converted at 1 ruble = \$1.32 in 1974; 1 ruble = \$1.34 in 1975; 1 ruble = \$1.33 in 1976; 1 ruble = \$1.34 in 1977; 1 ruble = \$1.46 in 1978; 1 ruble = \$1.52 in 1979.

Source: Vneshnyaya trgovlya v SSSR, 1975-79.

Table 21--Principal agricultural imports, USSR, 5-year averages, 1971-79 annual

Commodity	1961-65 : average	1966-70 : average	1971 : :	1972 : :	1973 : :	1974 : :	1975 : :	1976 : :	1977 : :	1978 : :	1979 : :	1980 : :
	-- 1,000 metric tons --											
Total Grain:	3,498	2,875	3,476	15,500	23,900	7,131	15,909	20,638	1/10,608	1/22,376	1/24,181	NA
Wheat	3,482	2,527	2,300	8,100	15,200	2,707	9,146	6,686	1/6,826	1/8,850	1/9,650	NA
Corn	5	317	947	4,059	5,379	3,440	5,548	11,376	1/4,189	1/13,203	1/14,518	NA
Rice, milled	230	316	332	280	154	194	279	324	460	414	631	NA
Wheat flour	316	266	279	274	307	316	339	380	462	391	792	NA
Animals for slaughter:												
Cattle	32	27	14	10	12	86	208	70	2/	2/	2/	NA
Sheep	57	51	39	45	44	46	37	32	2/	2/	2/	NA
Horses	NA	12	16	15	15	15	15	16	2/	2/	2/	NA
Meat and meat products	124	98	225	131	129	515	515	362	617	184	611	820
Shell eggs 3/	308	622	947	1,029	791	736	767	654	691	680	767	NA
Fruit:												
Fresh	163	582	691	808	828	901	860	871	841	847	907	NA
Dried	NA	102	130	96	80	95	118	101	113	114	109	NA
Vegetables:												
Fresh	163	161	200	269	162	196	144	186	191	182	147	133
Canned	115	223	310	346	351	362	347	324	370	381	422	NA
Raw sugar	2,153	2,082	1,536	1,658	2,485	1,856	3,236	3,343	4,287	3,990	3,766	3,800
Coffee	29	35	43	42	32	47	60	44	45	26	40	48
Cocoa beans	56	89	138	132	119	143	156	134	73	103	126	127
Tea	24	25	43	48	37	49	67	60	60	46	49	71
Tobacco	90	61	72	90	92	79	88	74	78	65	66	NA
Hides and skins 3/	23	28	25	24	27	22	22	14	1	3	1	NA
Oilseeds	88	50	45	482	768	70	424	1,827	1,455	966	1,814	NA
Crude rubber	296	305	246	231	274	315	235	NA	NA	NA	NA	NA
Wool, scoured	36	68	86	83	96	100	110	110	112	127	134	NA
Cotton lint	169	176	243	167	131	140	137	116	94	65	86	NA
Vegetable oil, edible	44	41	64	60	58	29	61	129	126	167	199	NA

NA = Not available.

1/ ESS estimates official Soviet sources report only value. 2/ Official Soviet sources report only value. 3/ Millions.

Source: Vneshnyaya trgovlya v SSSR, various issues; Ekonomicheskaya Gazeta, March 1981, #13.

Table 22--Soviet agricultural exports, 1974-79 by value

Commodity	1974	1975	1976	1977	1978	1979
-- Million dollars 1/ --						
Meat and meat products	54.6	50.9	49.5	38.5	51.4	43.8
Milk and milk products	31.2	34.6	36.0	36.4	40.2	47.6
Grains	822.1	508.0	212.9	508.0	205.1	555.6
Flour and pulse products	235.1	173.9	186.1	172.3	185.7	233.0
Vegetables, fruits and nuts	30.2	31.6	24.9	29.5	28.5	31.6
Sugar and confectionary	51.6	36.8	35.5	33.0	58.8	72.2
Alcoholic and non- alcoholic drinks	45.1	51.2	54.0	57.5	72.4	84.7
Tobacco products	4.1	6.3	4.9	6.2	7.3	5.0
Furs	77.4	72.8	108.7	115.4	134.9	162.5
Raw hides	11.9	13.1	12.6	7.1	7.2	12.5
Oilseed, tobacco and other raw materials	75.5	78.1	54.5	67.3	62.3	65.3
Natural fibers	873.6	936.3	1,033.2	1,375.9	1,247.8	1,239.4
Wool	16.4	16.3	8.2	12.5	11.8	8.7
Animal fats including butter	60.3	73.1	57.5	74.8	83.5	84.4
Vegetable oils	346.0	310.7	172.0	141.0	98.8	90.6
Technical fats and oils	6.6	7.2	5.3	2.7	3.6	4.4
Seeds and planting materials	25.9	25.6	22.3	40.5	34.9	45.6
Total agricultural exports	2,767.6	2,426.5	2,078.1	2,718.6	2,334.2	2,786.9

1/ Soviet official data converted at 1 ruble = \$1.32 in 1974; 1 ruble = \$1.34 in 1975; 1 ruble = \$1.33 in 1976; 1 ruble = \$1.34 in 1977; 1 ruble = \$1.46 in 1978; 1 ruble = \$1.52 in 1979.

Source: Vneshnyaya trgovlya v SSSR, 1975-79.

Table 23--Principal agricultural exports, USSR, 5-year averages, and annual, 1971-79

Commodity	1961-65 : average	1966-70 : average	1971 : 1971	1972 : 1972	1973 : 1973	1974 : 1974	1975 : 1975	1976 : 1976	1977 : 1977	1978 : 1978	1979 : 1979	1980 : 1980
-- 1,000 metric tons --												
Total grain	5,880	5,623	8,640	4,560	4,853	7,030	3,578	1,468	1/3,763	1/1,374	1/3,275	
Wheat	3,473	4,631	7,617	3,890	4,193	5,262	2,665	808	1/2,062	1/1,150	1/3,071	
Barley	960	521	688	298	276	924	818	503	1/1,506	1/50	1/26	
Corn	715	215	118	249	365	782	86	149	1/177	1/158	1/163	
Rye	678	245	208	115	--	--	--	--	--	--	--	
Oats	53	9	10	8	19	61	9	9	1/18	1/16	1/15	
Flour	273	552	654	378	614	892	569	632	651	769	762	
Groats	16	19	40	146	147	244	124	157	109	123	222	
Pulses	NA	138	150	55	47	58	50	37	43	52	54	
Sugar, refined	592	1,097	1,002	50	43	95	53	73	81	162	226	
Meat and meat products	95	115	35	60	75	56	44	41	33	39	34	
Butter	52	68	24	16	18	18	20	16	18	18	18	
Hides and skins 2/	3,433	2,113	967	782	242	53	350	346	319	326	574	
Oilseed cake and meal	221	295	44	52	NA	NA	NA	NA	NA	NA	NA	
Sunflowerseed	97	259	84	74	73	63	61	--	--	--	--	
Vegetable oil												
Total edible	193	600	408	423	371	512	416	295	231	149	113	
Sunflower	180	564	379	394	342	481	388	293	231	148	113	
Tea	8	12	11	12	12	14	17	14	21	17	17	
Cotton, lint	380	513	547	652	728	739	800	878	972	858	789	
Flax tow	20	25	27	26	30	33	20	16	17	16	15	
Starch	NA	NA	14	8	6	16	10	17	17	16	17	

NA = Not available.

-- = negligible or none.

1/ ESS estimates, official Soviet sources report only value.
2/ Thousands.Source: Vneshnyaya trgovlya v SSSR, various issues.

Table 24--U.S. agricultural trade with the USSR, 1971-80

Commodity	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980 1/
-- Million dollars --										
Exports 2/										
Wheat	.7	160.0	556.6	124.1	672.7	264.2	426.8	355.8	813.2	354.3
Coarse grains 3/	26.3	232.7	359.9	176.1	457.8	1,180.2	412.4	1,109.4	1,572.0	743.1
Corn	24.5	186.5	294.5	159.5	452.6	1,170.1	412.4	1,109.4	1,540.9	743.1
Rice	--	--	--	--	9.2	15.3	25.2	6.0	9.1	--
Soybeans	--	53.6	87.2	--	2.9	126.4	154.4	222.1	494.1	47.4
Oilcake & meal	--	--	--	.5	--	--	1.5	.2	6.7	--
Soybean oil	--	--	--	--	--	--	--	--	15.8	--
Cattle hides	10.9	9.6	1.1	7.9	5.2	2.5	.8	8.1	3.2	.1
Fruits, nuts and berries	1.5	1.1	2.8	5.3	6.1	8.4	20.4	16.8	15.6	18.5
Tallow (inedible)	--	--	--	--	14.0	--	--	18.7	57.6	28.2
All other	5.2	2.4	9.5	9.8	2.4	7.8	4/11.3	5/28.0	12.8	16.8
Total	44.6	459.4	1,017.1	323.7	1,170.3	1,604.8	1,052.8	1,765.1	3,000.1	1,208.4
Imports										
Animal and animal products	2.8	3.4	4.0	7.1	5.4	7.2	10.2	11.6	12.9	7.5
Casein & mixture	--	--	.2	2.0	1.7	.7	1.7	2.4	3.0	1.0
Furskins	2.7	3.0	3.1	4.5	3.5	6.1	8.0	8.9	9.6	6.5
Bristles	6/	.2	.5	.4	6/	--	--	--	--	--
Gelatin	--	6/	.3	.3	6/	.1	6/	--	--	--
Licorice root	.1	.2	.2	.2	1.1	.6	--	--	--	--
Tobacco fillers	--	--	--	--	--	--	--	.6	1.2	1.5
All other	.1	.2	.2	.9	.7	.5	.7	.2	.6	.6
Total	3.0	3.8	4.7	8.5	7.2	8.4	10.9	12.4	14.7	9.6

-- = Negligible or none.

1/ Estimate. 2/ Including transshipments through Canada, Belgium, the Netherlands, and West Germany. 3/ Includes corn, rye, barley, oats, and sorghum. 4/ Includes \$4.5 million of peanuts. 5/ Includes \$16.6 million of peanuts. 6/ Less than \$50,000.

Table 25--Production of mineral fertilizers by type, USSR, 5-year averages,
1971-80 annual

Year	Total	Nitrogen	Phosphate	Ground phosphate rock	Potash	Trace elements
-- 1,000 metric tons --						
Standard gross weight:						
1966-70 average	44,127	20,527	10,855	5,029	7,638	78
1971	61,398	29,530	14,826	5,420	11,556	66
1972	66,066	31,945	15,663	5,319	13,061	78
1973	72,332	35,310	17,305	5,395	14,224	98
1974	80,357	38,308	20,683	5,442	15,832	92
1975	90,202	41,628	23,816	5,573	19,097	88
Average	74,071	35,344	18,459	5,430	14,754	84
1976	92,244	41,970	25,844	4,372	19,977	81
1977	96,752	44,450	27,822	4,320	20,063	97
1978	97,976	45,356	28,596	4,240	19,694	90
1979	94,523	44,634	29,399	4,460	15,949	81
1980	104,000					
Nutrient weight 1/						
1966-70 average	10,379	4,210	2,030	955	3,177	7
1971	14,670	6,055	2,772	1,030	4,807	6
1972	15,931	6,551	2,929	1,011	5,433	7
1973	17,429	7,241	3,236	1,026	5,918	9
1974	19,352	7,856	3,868	1,034	6,586	8
1975	21,998	8,535	4,452	1,059	7,944	8
Average	17,876	7,248	3,451	1,032	6,138	8
1976	22,590	8,609	4,833	831	8,310	7
1977	23,493	9,114	5,203	821	8,347	8
1978	23,653	9,299	5,347	806	8,193	8
1979	22,137	9,151	5,497	847	6,635	7
1980						

NA = Not available.

1/ Nitrogen--20.5 percent N, phosphates--18.7 percent P₂O₅, ground rock phosphates--19 percent P₂O₅, potash--41.6 percent K₂O.

Selected feed output from all sources, by type,
1975-80 and the 1985 plan

NA = not available.

1/ As of September 26. No later data or final output available.
2/ As of October 6.

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